DOCUMENT RESUME

ED 268 078 SP 027 172

TITLE	Southwest Park and Recreation Training Institute Proceedings (29th, Kingston, Oklahoma, February 5-8, 1984).
INSTITUTION	Texas Tech Univ., Lubbock. Dept. of Park Administration and Landscape Architecture.
PUB DATE	Feb 84
NOTE	141p.
PUB TYPE	Collected Works - Conference Proceedings (021) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	*Delivery Systems; *Land Use; *Parks; Public Relations; *Recreational Facilities; *Turf Management

ABSTRACT

After presenting introductory material about the Institute and its participants, this document offers brief summaries of workshops held at this conference. Workshop topics were: (1) solar energy; (2) nonverbal communication; (3) land acquisition; (4) employee orientation and counseling; (5) neighborhood parks; (6) Arbor Day; (7) trees in the urban landscape; (8) facilities for outdoor athletics and recreation; (9) irrigation and landscape management; (9) contracting services; (10) signs and signage; (11) "Nimbyocratic Society"; (12) employee orientation and training; (13) risk management and safety; (14) back country toilet unit installation; (15) urban rivers; (16) baseball fields; (17) reorganization; (18) camps for handicapped individuals; (19) volunteers; (20) downtown revitalization; (21) shore land management and erosion control; (22) practices for lakes or reservoirs; and (23) botanic garden maintenance. (JD)

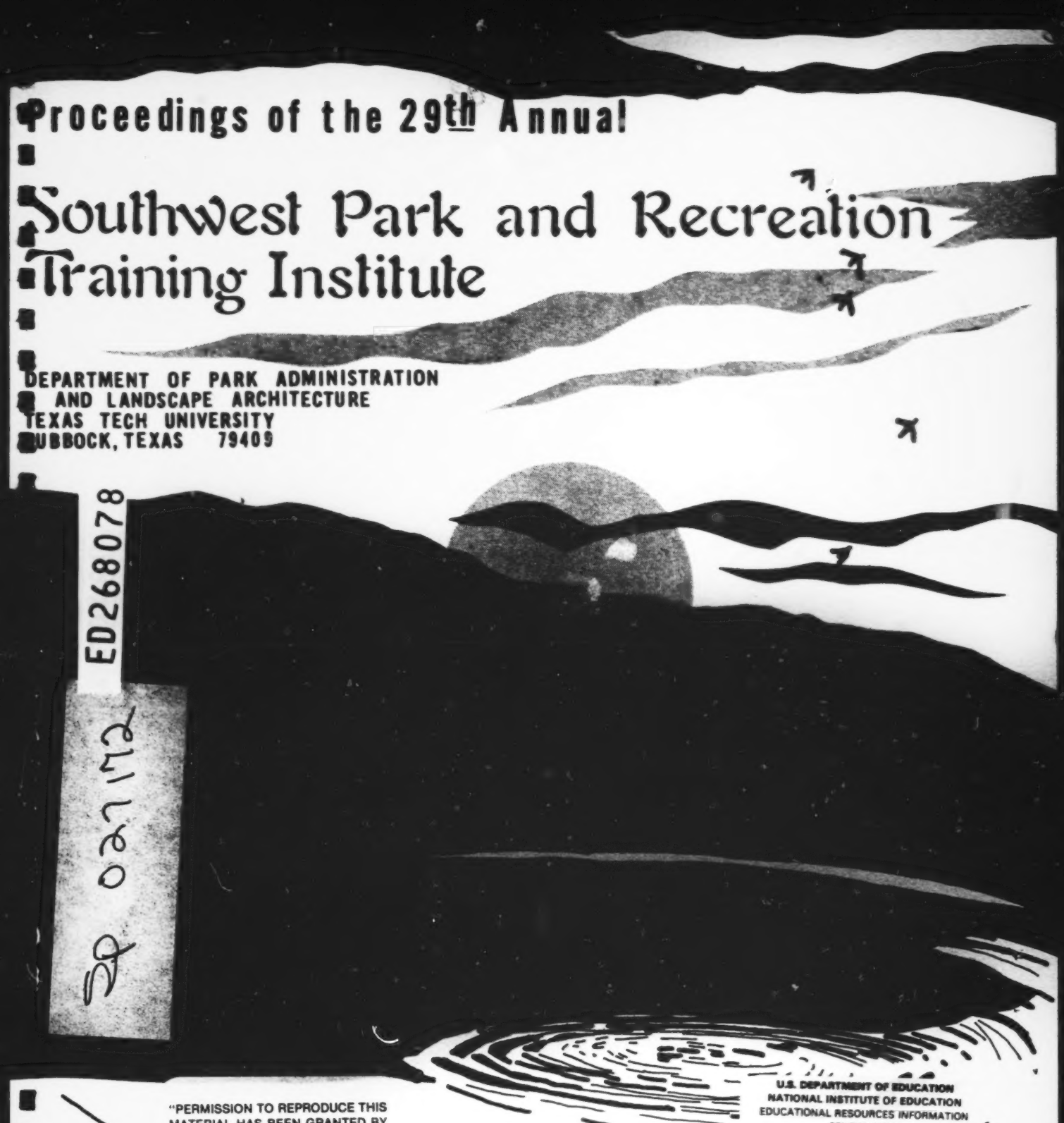
****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Proceedings of the 29th Annual

Southwest Park and Recreation Training Institute

DEPARTMENT OF PARK ADMINISTRATION
AND LANDSCAPE ARCHITECTURE
TEXAS TECH UNIVERSITY
LUBBOCK, TEXAS 79409

ED268078
SP 027172



"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

J.W. Kitchen

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

February 5-8, 1984

29th ANNUAL

SOUTHWEST PARK AND RECREATION TRAINING INSTITUTE

February 5,6,7 and 8, 1984

Lake Texoma Lodge
Kingston, Oklahoma

OBJECTIVES:

Fostering, gathering and dissemination of information with reference to parks and recreation facilities, grounds, programs and objectives. To work with all people particularly of the Southwest Area to encourage a greater degree of professionalism among those in the part and recreation profession. To foster a spirit of cooperation between all agencies related to public park and recreation programs. To encourage and support those colleges which train people in park, recreation and related fields.

SPONSORED BY:

Oklahoma Tourism and Recreation Department

CONDUCTED BY:

Department of Park Administration, Landscape Architecture
Texas Tech University
Lubbock, Texas 79409

SOUTHWEST PARK AND RECREATION TRAINING INSTITUTE - 1984

EXECUTIVE COMMITTEE

President.....Bob Woodruff

Vice President.....Eddie Hueston

Secretary-Treasurer.....Max Wiens

Past President.....John Alford

Director.....Mickey Carter
Director.....Max Robertson
Director.....David Nivens
Director.....Bill Thompson
Director.....Jerry Darter
Director.....Rick Holland

INSTITUTE AWARDS

Diamond Award

John H. Alford
Eddie C. Hueston

Ruby Award

Ty Probasco

Special Contribution Awards

Abe L. Hesser
June Stewart
City of Tulsa Parks and Recreation Department

Twenty-Five Year Attendance Awards

Ken Krenek
Jess Murphy

Twenty Year Attendance Awards

Jim Fisher
Ernie McCown
Charles Rogers

Ten Year Attendance Awards

Ernest Fish
Earnest Johnston
G.L. Luckenga
Don Corbin
Rick Holland
Roger Scott

OFFICERS OF THE INSTITUTE

PRESIDENT

Bob Woodruff
Assistant City Manager
Box 358
Plano, TX 75074
(214) 424-6531

VICE-PRESIDENT

Eddie C. Hueston, Assistant Director
Parks & Recreation Department
3012 S. Hampton
Dallas, TX 75224
(214) 339-4116

SECRETARY/TREASURER

Max Wiens, Assistant Director
Park & Rrecreation Services
200 Civic Center
Tulsa, OK 74103
(918) 592-7850

PAST PRESIDENT

John Alford, President
High Plains Construction
4411 15th Street
Lubbock, TX 79416
(806) 797-0573

DIRECTORS

Mickey Carter, Director of Parks
El Paso County Parks Dept.
1045 W. Rio Grande
Colorado Springs, CO 80906
(303) 471-5688

Max Robertson, Director
Parks & Recreation Dept.
P.O. Box 1370
Waco, TX 76703
(817) 753-0222

David Nivens, Assistant Director
Parks & Recreation Dept.
1000 Throckmorton
Ft. Worth, TX 76102
(817) 810-7637

Bill Thompson, Asst. Director
Parks & Recreation
825 W. Irving Blvd.
Irving, TX 75060
(214) 253-2501

Jerry Darter, President
Kansas City Parks Dept.
5605 E. 63rd Street
Kansas City, MO 64130
(816) 444-3113

Rick Holland, Supt.
Arlington Parks Dept.
P.O. Box 231
Arlington, TX 76013
(817) 275-3271

1984 BRAG NIGHT RESULTS

CATEGORY I

1. "Hand of Man", Leroy Williamson, Texas Parks and Wildlife

2. "Historical Park", Robert Asher, Farmers Branch, Texas

3. "Our Computer Applications", Deville Hubbard, Farmers Branch, Texas

4. "Life Be In It", Mark McHenry, Kansas City, MO

5. "Llano Estacado Park People - P.S.A.", Celeste Hoehne, Lubbock, Texas

6. "On the Road Again", Don Wendell, Plano, Texas

7. "Threshold to Success", Tony Weber, Lubbock, Texas

*8. "Llano Estacado Park People - Slide Presentation", Dan Kamp/Mary Pryjomski, Lubbock, Texas

9. "Cone Killers", Marie Scalzo, Austin, Texas

10. "Plano - Coors Balloon Festival", Don Wendell, Plano, Texas

11. "Dune/Beach Protection", Linde Lowry, Brazoria County, Texas

CATEGORY II

*1. Friends of Retillon (No Litter)", Dan Lacy, University of Houston, Texas

CATEGORY III

*1. "First Annual Flower Show", Eddie Hueston, Dallas, Texas

2. "S.P.A.R. (Shreveport Parks & Recreation)", Jay Ellington, Shreveport, LA

*Indicates the Winner in that Category

OFFICERS OF THE INSTITUTE

Jerry Darter, Rick Holland, Eddie Hueston, Bob Woodruff, Max Wiens, Bill Thompson, Max Robertson

BEST COPY AVAILABLE

Diamond Award
Eddie C. Hueston & John H. Alford

25 Year Attendance
Ken Krenek

20 Year Attendance
Ernie McCowan & Jim Fisher

10 Year Attendance

Ernest B. Fish

Don Corbin

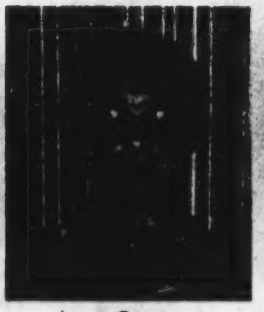
Rick Holland

Roger Scott

C. L. Luckenga

Special Contribution

Abe Hesser



June Stewart

Russell Studebaker

BEST COPY AVAILABLE

SCHOLARSHIP RECIPIENTS
Sean Davis, Karl Steavenson, Barry Kirkpatrick, Susan Grimes; Max Robertson, Scholarship Chairman

TOMA AWARDS

Category I
Mary Pryjomski

Category II
Dan Lacy

Category III
Eddie Hueston

BEST COPY AVAILABLE

John H. Alford, Owner
High Plains Construction
4411 15th Street
Lubbock, TX 79416

Sadik Artuc, Asst. Professor
School of Landscape Architecture
Louisiana State University
Baton Rouge, LA 70803
(504) 388-1447

Fred Aycock
Asst. Dir. Community Service
City of Abilene
P.O. Box 60
Abilene, TX 79604
(950) 676-6219

Richard Bales, Supt. Recreation
Tulsa County Park Dept.
2315 Charles Page Blvd.
Tulsa, OK 74127
(918) 583-0032

Joan Barels, Center Director
Dealey Recreation Center
City of Dallas
6501 Royal Lane
Dallas, TX 75220
(214) 241-5806

Ogden Bass, Urban Planner
City of Waco Parks & Rec. Dept.
P.O. Box 1370
Waco, TX 76703
(817) 753-0222

Betsy Bates, Director
Landscape Architecture
Cityscape, Inc.
6111 Summer Creek Circle
Dallas, TX 75231
(214) 481-8576

Stephen C. Beachy
Dir. Parks and Recr. Dept.
P.O. Box 9960
College Station, TX 77841
(409) 764-3773

Mel Bennett, Unit Mgr. III
Maintenance Section
Parks & Recreation Dept.
201 Channing Square, Rm B-2
Oklahoma City, OK 73102
(405) 231-2533

Marvin Berry, Park Supt.
Texas Parks & Wildlife
Atlanta State Rec. Area
Atlanta, TX 75551
(214) 796-6476

Gary Birdsong
Birdsong Products, Inc.
1405 Woodbine Street
Arlington, TX 76012
(817) 265-4664

Charles L. Bitsche, Park Supt.
City of Farmers Branch
P.O. Box 340435
Farmers Branch, TX 75234
(214) 247-3131 Ext. 275

John V. Blackburn
Special Projects Corrd/Asst.Prof.
Texas A&M Universtiy
College Station, TX 77843
(409) 845-5411

Lee Bodenhamer, Park Supt.
Parks & Recreation
P.O. Box 280
Duncanville, TX 75116

Don Booher, Dir. Parks & Rec.
City of Edmund
431 S. Boulevard
Edmund, OK 73034
(405) 341-5055 Ext. 260

Paul Boorman, Supt. of Parks
Parks & Leisure Serv.
City of Longview
P.O. Box 1952
Longview, TX 756096
(214) 757-4555

Steve Bosak, Park Planner
City of Arlington
Box 231
Arlington, TX 76010
(817) 275-3271 Ext. 2364

Jeff C. Broad, Horticulturist
City of Abilene
P.O. Box 60
Abilene, TX 79604
(915) 676-6452

Jackie Bubenik, Executive Dir.
River Parks Authority
707 S. Houston, Suite 315
Tulsa, OK 74127
(918) 582-0051

Jack O. Bulen, Park Supt.
756 Jones
Lewisville, TX 75067
(214) 435-0111

Helen Bundschu
Park and Recreation Dept.
214 Meadow Park Drive
White Settlement, TX 76108

Gede Burt, Student
Texas Tech Universtiy
Lubbock, TX 79415
(806) 744-2151

Michael F. Byerly, Gen'l Suprv.
Park & Rec. Dept. City of Dallas
8007 E. Northwest Hwy.
Dallas, TX 75238
(214) 343-1973

Dick Byler, Dir. Recreation
Commerce City Recr. Dept.
6500 S. 72nd Avenue
Commerce City, CO 80022
(303) 288-0910

Traci Carlile, Designer
Landscape & Irrigation
City of Farmer Branch
P.O. Box 340435
Farmers Branch, TX 75234
(214) 247-3131

Doug Carter, Park Supt.
P.O. Boxx666
Missouri City, TX 77459
(713) 499-1681

Mickey Carter, Director of Parks
El Paso County Parks
1045 W. Rio Grande
Colorado Springs, CO 80906
(303) 471-5688

Charles R. Cawcellare, Prks Frmn
City of Farmers Branch
P.O. Box 349435
Farmers Branch, TX 75234
(214) 247-3131 Ext. 274

Jim Chadwick
Watson Dist. Co.
1351 S. Loop 12
Irving, TX 75060
(214) 439-3733

Elta Chandler, Board Member
Parks & Recreation
City of Plano
P.O. Box 358
Plano, TX 75074
(214) 423-4795

Bob Cheatham, Park Planner
City of Oklahoma City
201 Channing Square Rm B-2
Oklahoma City, OK 73102
(405) 231-2533

Don Corbin
Parks & Recreation Dept.
P.O. Box 11
Grand Prairie, TX 74051

Marvin Cullison, Asst. Supt.
Parks & Rec. Dept.
905 W. Hartford
Ponca City, OK 74604
(405) 762-6381

Andrew Czimskey, Asst. Dir.
Parks and Recreation
City of College Station
College Station, TX 77841
(409) 764-3773

Jerry Darter, Director
Kansas City Parks Dept.
5605 E. 63rd Street
Kansas City, MO 64130
(816) 444-3113

Don Davenport
Supt. of Parks
103. SW 4th
Lawton, OK 73401
(405) 357-6100

Floyd Davidson
Park Maint. Superv.
City of Dallas Parks & Rec.
3012 S. Hampton
Dallas, TX 75224
(214) 339-4116

Parnell Dixon, Park Supt.
City of Hurst
700 Mary Drive
Hurst, TX 76053

Bob Doke, Director
Parks & Rec. Dept.
Box 969
Duncan, OK 73533
(405) 252-0250

Terry Dopson, Director
Parks & Recreation
P.O. Box 9277
Corpus Christi, TX 78469

Paul Downard
Goldthwaites of Texas, Inc.
1401 Foch
Fort Worth, TX 76107
(817) 332-1521

Russ Downey, Engineer
Texas Parks & Wildlife Dept.
4200 Smith School Raod
Austin, TX 76744
(512) 479-4944

Charles Dreyfus, Admin. Asst.
Park & Recreation Dept.
City of Fort Worth
2222 W. Rosedale
Fort Worth, TX 76110
(817) 870-7000

Jay Ellington, Director
Parks and Recreation
City of Shreveport
800 Snow Street
Shreveport, LA 71101
(318) 226-6446

Henry W. Engelbrecht, Director
Parks and Recreation
City of Beaumont
P.O. Box 3827
Beaumont, TX 77704
(409) 838-0652

Robert Epperson, Supt. of Parks
City of Mesquite
711 N. Galloway
Mesquite, TX 75149
(214) 288-7711 Ext. 322

John Fain, Landscape Arch.
City of Fort Worth
2222 W. Rosedale
Ft. Worth, TX 76107
(817) 870-7091

T.R. Fenske
Park Board Engineer
455 N. Main, City Hall
Wichita, Kansas 67202-1690

Rosa Finsley, V. President
Entenmann Design-Gardens by
Finsley
4633 N. Central
Dallas, TX 75205
(214) 528-5531

Ernest B. Fish, Professor
Dept. Park Administration &
Landscape Architecture
Texas Tech University
Lubbock, TX 79409
(806) 742-2858

Jim Fisher, Executive Director
N. Jeffco Metro Rec.& Park Dist.
9101 Ralston
Arvada, CO 80002
(303) 424-7733

Mary Beth Fletcher, Admin. Asst.
Park and Recreation Dept.
2222 W. Rosedale
Fort Worth, TX 76110
(817) 870-7000

Jud Foster, Park Supt.
City of Norman
P.O. Box 370
Norman, OK 73070
(405) 321-1330

James W. Fox, Admin. Asst.
Parks & Rec. Dept.
Plano, TX 75234
(214) 423-4795

Alton Franklin
Development & Repair
Texas Parks & Wildlife
4200 Smith School Road
Austin, TX 78744
(512) 479-4928

Bruce Frantz, Sr., Horticulturist
Park & Rec. Dept.
222 W. Rosedale
Fort Worth, TX 76110
(817) 870-7000

Richard J. Frisbie, Park Planner
Texas Parks & Wildlife Dept.
4200 Smith School Raod
Austin, TX 78744
(512) 479-4800

Jerry Garrett, Gen. Suprv.
Dallas Park & Rec. Dept.
6501 Royal Lane
Dallas, TX 75230
(214) 365-8010

J.B. Gassaway, Supervisor
Parks & Rec. Dept.
3012 S. Hampton
Dallas, TX 75224
(214) 339-4226

Roger Geers
Park Supervisor Asst.
2222 W. Rosedale
Fort Worth, TX 76110
(817) 870-7000

Barbara Geyer, Student
Texas Tech University
Lubbock, TX 79413
(806) 742-2236

Garrett Gill, Asst. Professor
Dept. Park Administration &
Landscape Architecture
Texas Tech University
Lubbock, TX 79409
(806) 742-2869

Stephen C. Graf
City of Plano
P.O. Box 358
Plano, TX 75074

Don Graven, Maint. Foreman
City of Abilene, Parks
P.O. Box 60
Abilene, TX 79604
(915) 676-6223

Larry Graves
Park Maintenance Supervisor
City of Dallas
3012 S. Hampton
Dallas, TX 75224
(214) 339-4116

Mike Griffith, Supervisor
Dallas Parks & Recreation
7803 Fair Oaks
Dallas, TX 75231
(214) 348-2379

Susan Grimes, Student
Texas Tech University
Lubbock, TX 79409

John S. Guthrie, Horticulturist
City of Richardson
P.O. Box 309
Richardson, TX 75080
(214) 238-0761

Jerry Haire, Superintendent
Waco Parks & Rec. Dept.
P.O. Box 1370
Waco, TX 76703
(817) 753-0222

Mike Hall, Dir. Parks & Rec.
City of Abilene
555 Walnut
Abilene, TX 79604
(915) 676-6221

Dee Hardin
Park Operations Supt.
Ft. Worth Park & Rec.
2222 W. Rosedale
Fort Worth, TX 76110
(817) 870-7000

Perry Harrison
Lewisville Parks Dept.
756 Jones
Lewisville, TX 75067
(214) 436-0111

Jeff Harting, Student
Texas A&M University
904 University Oaks #214
College Station, TX 75214
(409) 696-8321

Fred Herring, Director
Lewisville Parks & Rec.
151 W. Church Street
Lewisville, TX 75067
(214) 436-0111

David Hickey, Student
Texas Tech University
Lubbock, TX 79406
(806) 796-0742

Lewis Hiltpold, Parks Supt.
P.O. Box 3827
Beaumont, TX 77704
(409) 838-0652

Rick Holland, Supt.
Arlington Parks Dept.
P.O. Box 231
Arlington, TX 76013
(817) 275-3271

Bill Hollie, Regional Mgr.
Okla. Tourism & Rec. Dept.
P.O. Box 698
Wilburton, OK 74578
(918) 465-3831

Robert Howell, Owner
Cedarvale Gardens
Rt. 1 Box 50
Davis, OK 73030

Dick R. Huck, Director
Parks & Recreation
103 SW 4th
Lawton, OK 73501
(405) 357-6100

Eddie C. Hueston, Asst. Dir.
Dallas Parks & Rec. Dept.
3012 S. Hampton
Dalals, TX 75224
(214) 339-4116

Don Inman, Park Planner
Irving Parks & Rec. Dept.
825 W. Irving Blvd.
Irving, TX 75060
(214) 253-2501

Jim Jacksits
Austin Parks & Rec. Dept.
P.O. Box 1088
Austin, TX 78767
(512) 477-6511

Peter Jamieson
Associate Park Planner
P.O. Box 231, 101 W. Abram St.
Arlington, TX 76010
(817) 275-2171 Ext. 2363

Andrew Jennings, Parks Supt.
P.O. Box 517
McKinney, TX 75069
(214) 542-1306

Al Johnson, Asst. Director
P.O. Box 309
Richardson, TX 75080
(214) 235-8331

Allan Johnson, Asst. Director
Dallas Park & Rec. Dept.
2530 Webb Chapel Ext.
Dallas, TX 75220
(214) 352-3967

Earnest Johnston, Sales Rep.
Modlin Recreation Equip., Inc.
P.O. Box 110299
Arlington, TX 76007
800-433-5347 (Okla)
800-772-5368 (Texas)

Bobby R. Jones
Park Maintenance Supt.
P.O. Box 309
Richardson, TX 75080
(214) 235-8331

Dr. Dan Kamp, Director
Parks & Recreation
P.O. Box 2000
Lubbock, Texas 79457
(806) 762-6411

James Karcher, Landscape Arch.
City of Mesquite
P.O. Box 137
Mesquite, TX 75149
(214) 288-7711

Hayden M. Karn, Supt.
Parks & Recreation
Box A, 532 W. Main
Yukon, OK 73099
(405) 354-8442

Jarrett Kelough, Recreation Dir.
City of Ada
13th & Townsend
Ada, OK 74820
(405) 436-6300 Ext. 31

Terry Kidder
Loss Control Analyst
Park & Recreation Dept.
200 Civic Center, Rm 642
Tulsa, OK 74103
(918) 592-7869

Bill Kiewit
Park Maintenance Superv.
3012 S. Hampton
Dallas, TX 75224
(214) 339-4116

James R. King (Bob)
Tulsa County Horticulturist
Tulsa County Park Dept.
2315 Charles Page Blvd.
Tulsa, OK 74127
(918) 583-0032

James W. Kitchen, Professor
Dept. Park Administration &
Landscape Architecture
Texas Tech University
(806) 742-2858

Kenneth R. Klose, Park Supt.
Texas Parks & Wildlife Dept.
Meridian, TX 76665
(817) 434-2536

Ken Krenek, Park Superintendent
Box 9277
Corpus Christi, TX 78469
(512) 882-1971

Dan Lacy, Asst. Manager
University of Houston
4211 Elgin
Houston, TX 77004
(713) 749-4213

Sharon Lafitte, Director
Parks & Recreation
531 W. Chestnut
Denison, TX 75020

George Lain, Sales
Colonial Motor Co.
2030 Walnut Hill Lane
Dallas, TX 75229
(214) 556-1191

John L. Lampe
Park Operations Superintendent
2222 W. Rosedale
Ft. Worth, TX 76110
(817) 870-7000

Tom Lawrence, Landscape Arch.
Johnson, Johnson & Roy
3000 Carlisle, Suite #200
Dallas, TX 75204
(214) 749-7341

Morris Lee, Parks Superintendent
P.O. Box 60
Abilene, tX 79604
(915) 676-6223

Edward P. Legg, Dr. of Develop.
The Nature Conservancy,SE Region
503-B E. 6th St.
Austin, TX 78746
(512) 479-0301

Keith Livingston, Admin. Analyst
City of Irving
825 W. Irving Blvd.
Irving, TX 75060
(214) 253-2501

Earl London, Supervisor
Edmond Park Dept.
P.O. Box 2970
Edmond, OK 73083
(405) 348-8830 Ext. 261

Tom Loper, Park Supt. II
Texas Parks & Wildlife Dept.
Caprock Canyons State Park
Box 204
Quitaque, TX 79255
(806) 455-1492

David Loughridge, Director
Parks and Rec. Dept.
P.O. Box 309
(214) 235-8331

Linde Lowry
Director of Acquisition
RR 1, Quintana Beach Park
Freeport, TX 77541
(409) 233-5212

Geral Luekenga, Park Insp.
Okla. Parks & Rec.
500 Will Rogers Bldg.
Oklahoma City, OK 73105
(405) 521-3411

Allen Lubben, Foreman
City of Denton
315 E. McKinney
Denton, TX 76201
(817) 566-8273

Ernie McCown, Director
Parks & Recreation
700 Mary Drive
Hurst, TX 76053
(817) 281-6160

Clay McDermeit, Director
Div. of State Parks
Okla. Dept. of Tourism & Rec.
500 Will Rogers Bldg.
Oklahoma City, OK 73105
(405) 521-3411

Bob McDuff, Dir. Parks & Rec.
12100 Millwright
Austin, TX 78750
(512) 258-4104

Randall K. McFarlin
City of Ada
13th & Townsend
Ada, OK 74820
(405) 436-6300 Ext. 29

Henry McGriff, Div. Maint. Supr.
Tulsa Co. Park Dept.
2315 Charles Page Blvd.
Tulsa, OK 74127
(918) 583-0032

Mark McHenry, Supt. Parks Mgt.
K.C. MO Parks & Rec. Dept.
Kansas City, MO 64130
(816) 444-3113

Loyd McKinzy, Unit Manager III
Parks & Rec. Dept.
201 Channing Square Rm B-2
Oklahoma City, OK 73102
(405) 231-2533

Jim E. Manning, Director
Parks & Grounds Maintenance
Parks & rec. Dept.
201 Channing Square, Rm B-2
Oklahoma City, OK 73102
(405) 231-2533

Kris Marek, Asst. Director
Div. of State Parks
500 Will Rogers Bldg.
Oklahoma City, OK 73105
(405) 521-3411

Gene W. Mason, Supt.
Blackwell Park and Rec.
Box 350
Blackwell, OK 74631
(405) 363-0157

Jeff Mason, Dist. Sales Mgr.
Spring Valley Nurseries, Inc.
Rt. 3, Box 599
Broken Arrow, OK 74014
800-331-2220

Mickey Martin, General Superv.
Parks & Rec. Dept.
3012 S. Hampton
Dallas, Texas 75224
(214) 339-4116

Jerry Massey, Foreman
Euless Parks Dept.
201 N. Ector Drive
Euless, TX 76039
(817) 283-5381

Sandra B. Matney, Asst. Dir.
Dallas Parks and Rec.
1500 Marilla 6 FN
Dallas, TX 75201
(214) 670-4089

Milton Miller
General Superv. - Programs
Parks & Rec.
3012 S. Hampton
Dallas, TX 75224
(214) 339-4116

W.D. Miller, Professor
Dept. of Rec. Resources &
Landscape Architecture
Colorado State University
Fort Collins, CO 80523

Robert Mills, Supt. Rec.
Waco Parks & Rec. Dept.
P.O. Box 1370
Waco, TX 76703
(817) 753-0222

Al Mings
City of Longview
P.O. Box 1952
Longview, TX 75606
(214) 757-4555

David Lee Mitchell, Park Supt.
City of Benbrook
911 Winscott
Benbrook, TX 76126
(817) 249-3000

Paul J. Mitchell
Coop Ext. Serv. & Assoc, Prof.
Okla. State Univ. Coop. Ext. Serv.
335 AGH O.S.U.
Stillwater, OK 74078
(405) 624-5423

Edwin T. Mole, Arch. Asst. II
Texas Parks & Wildlife Dept.
4200 Smith School Road
Austin, TX 78744
(512) 479=4912

Gary Morgan, General Superv.
Dallas Parks Dept.
6501 Royal Lane
Dallas, TX 75230
(214) 369-8451

Robert Morren, SW Regional Mgr.
Okla. Tourism & Rec. Dept.
500 Will Rogers Bldg.
Oklahoma City, OK 73105
(405) 329-2491

Paul A. Morris, Director
Parks and Recreation
2700 Willow Street
North Little Rock, ARK 73114
(501) 758-2445

Jack Meuller, Park Supt.
Des Moines Park. Dept.
3226 University
Des Moines, IA 50311
(515) 271-4734

Maxine Mull, Rec. Center Suprv.
Arlington Rec. Dept
1815 New York Ave.
Arlington, TX 76010
(817) 483-5220

Jess Murphy, Engineer
Okla. Tourism & Rec.
500 Will Rogers Bldg.
Oklahoma City, OK 73105
(405) 751-4841

Pat Murphy
Retired
2225 NW 48th
Oklahoma City, OK

Clinton H. Murray, Salesman
Turf Equipment
Dallas, Texas
(817) 281-4657

Kevin Murray, Dist. Suprv.
City of Plano
Plano, TX 75074
(214) 423-4795

Danny Muzyka
Director Parks & Rec.
P.O. Box 358
Plano, TX 75074
(214) 423-4795

Kenneth L. Newman, Proj. Eng.
Texas Parks & Wildlife Dept.
4200 Smith School Road
Austin, TX 78744
(512) 479-4915

David Nivens
Asst. Dir. Facilities
Park & Rec. Dept.
2222 W. Rosedale
Fort Worth, TX 76110
(817) 870-7000

Charles Nutter
Asst. Dir. Spec. facilities
Tulsa Park & Rec. Dept.
200 Civic Center
Tulsa, OK 74103
(918) 592-7860

Darnce O'Neal
Recreation Center Dr.
Dallas Parks & Rec.
3012 S. Hampton
Dallas, TX 75224
(214) 339-4116

James E. O'Shea, Landscape Arch.
K.C. Parks & Rec.
5605 E. 63rd St.
Kansas City, MO 64130
(816) 444-3113

Bob Overman, Supt. Planning
El Paso County Parks
1045 W. Rio Grande
Colorado Springs, CO 80917
(303) 471-5688

Terry Owens, Supt. Rec.
Longview Parks & Leisure Serv.
P.O. Box 1952
Longview, Tx 75601
(214) 757-4555

Pat Ozment, Director
Parks & Rec. Dept.
905 W. Hartford
Ponca City, OK 74601
(405) 762-6381

Henry Painter,Horticulture Supt.
Park & Rec. Dept.
2222 W. Rosedale
Fort Worth, TX 76110
(817) 870-7000

Chester Pannell
356 Jones
Lewisville, TX 75067
(214) 436-0111

Rick Parkins, Park Planner
City of Edmond
P.O. Box 2970
Edmond, OK 73083-2970
(405) 348-8830 Ext. 259

Randy Patterson, Foreman
Park & Rec. Dept.
215 E. McKinney
Denton, TX 76201
(817) 566-8273

JoAnn Pearce, Dr. Bldg. Mgr.
Parks & Rec. Dept.
Oklahoma City, OK 73109
(405) 231-3822

Bob Phillips, Director
201 Ector
Euless, TX 76039
(817) 283-8018

Dale Pingel, Supt. of Grounds
U.T.A.
Box 19228
Arlington, TX 76019
(817) 273-3197

Donna Pond-Watson
Special Programs Mgr.
Tulsa Park & Rec. Dept.
200 Civic Center
Tulsa, OK 74103
(918) 592-7859

Joseph S. Popadic, Assoc. Prof.
Louisiana State Univ.
School of Landscape Architecture
Baton Rouge, LA 70803
(504) 388-1442

Sharon Prete, Dir.
Parks & Rec. Dept.
214 E. Main St.
Round Rock, TX 78664
(512) 255-3612 Ext. 32

Ed Prochaska, Landscape Foreman
Entenmann Designs, Inc.
4633 N. Central Expressway
Dallas, TX
(214) 528-5531

Mary Pryjomski
Program Devel. Coordinator
Parks & Rec. Dept.
P.O. Box 2000
Lubbock, TX 79457
(806) 747-6411

Mendy Putman, Rec. Aide
Colo. Spgs. Park & Rec.
1400 Glenn Aven.
Colorado Springs, CO 80905
(303) 578-6640

Terry Putman
Park Maint. & Oper. Manager
Colo. Spgs. Park & Rec.
1400 Glen Aven.
Colorado Springs, CO 80905
(303) 578-6640

Carolyn Ramsey, Leisure Ser. Co.
City of Sherman
P.O. Box 1106
Sherman, TX 75090
(214) 892-4545 Ext. 219

Robert Rayburn
Landscape Architect
Texas Parks & Wildlife Dept.
4200 Smith School Rd.
Austin, TX 78744
(512) 479-4800 Ext. 2510

Gayle Reams, Co-Owner
Custom Building Products
P.O. Box 32231
Oklahoma City, OK 73123
(405) 495-8585

Robin Reeves, Park Planner
City of Plano
P.O. Box 358
Plano, TX 75074
(214) 424-6531

Bob G. Reid, Mainland Supt.
Galveston Co. Beach & Parks.
613 19th Street
Galveston, TX 77550
(409) 766-2411

Ray Reid, Park Mgr.
State Capital Park
2221 Culbertson Dr.
Oklahoma City, OK 73105
(405) 521-2946

Bill Rice, Park Supt.
Box 969
Duncan, OK 73533

Bob Riley, Landscape Arch.
City of Fort Worth
2222 W. Rosedale
Fort Worth, TX 76112
(817) 870-7088

Gene Riley, Reg. Manager
Oklahoma State Parks
Box 493
Pawnee, OK 74058
(918) 762-3614

Jim Rist, Park Suprv.
Ft. Worth Park & Rec.
2222 W. Rosedale
Fort Worth, TX 78110

Max Robertson, Director
Waco Parks & Rec. Dept.
P.O. Box 1370
Waco, TX 76703
(817) 753-1370

Jon Rodiek, Chairman
Dept. Park Administration &
Landscape Architecture
Texas Tech Universtiy
Lubbock, Texas 79409

C.B. Rogers, Regional Mgr.
Oklahoma State Parks
Rt. 1 Box 211
Hubert, OK 74441
(918) 772-2047

Sylvia Royster, Volunteer Prog.
Parks & Rec.
2999 S. Wayside
Houston, TX 77023
(713) 641-7569

Bill Runnoe, Ranger Coord.
Okla. Dept. of Tourism
500 Will Rogers Bldg.
Oklahoma City, OK 73105
(405) 521-3287

Jane Russell, Manager
Indian Lodge
Texas Parks & Wildlife
P.O. Box 786
Fort Davis, TX 79734
(915) 426-3254

Larry Schaapveld, Urban Forester
Texas Forest Serv.
2222 W. Rosedale
Fort Worth, TX 76110
(817) 429-9318

Lamar Schantz, Parks Supt.
Irving Parks & Rec.
825 W. Irving Blvd.
Irving, TX 75060
(214) 253-2501

Roger K. Scott
Supt. Planning & Const.
Northglenn Parks & Rec.
121701 Community Center Dr.
Northglenn, CO 80233
(303) 450-8720

Mike Segrest, Director
Boulder Parks & Rec. Dept.
P.O. Box 791
Boulder, CO 80306
(303) 441-3414

John Sellars, Director
Parks & Rec.
P.O. Box 11
Grand Prairie, TX 75051

Melvin Shanks, Dir.
Arlington Parks & Rec.
P.O. Box 231
Arlington, TX 76013
(817) 275-3271

Bill Sharp
Supt. of Parks
P.O. Box 309
Richardson, TX 75080

Tim Shinogle
Parks & Recreation
Box 11
Grand Prairie, TX 75051

Mike Shotwell, Saleman
Watson Dist. Co.
1351 S. Loop 12
Irving, TX 75060
(214) 438-3733

Dewey L. Shroyer, Director
Grounds Maintenance
Texas Tech University
P.O. Box 4219
Lubbock, TX 79409
(806) 742-3801

Chris Sidaris, Asst. Dir.
Shreveport Parks & Rec.
800 Snow Street
Shreveport, LA 71101
(318) 226-6446

Bill Slate
Unit Manager III. Const. Sec.
Parks & Rec. Dept.
201 Channing Square Rm B-2
Oklahoma City, OK 73102
(405) 231-2533

Dwayne Slaten
Pavement & Grounds Supt.
Dallas/Ft. Worth Airport
P.O. Drawer DFW
Dallas, TX
(214) 574-6625

Bill D. Smith, Park Suprv.
Oklahoma State Parks
2221 Culbertson
Oklahoma City, OK
(405) 521-2946

Robert Smith
Arlington Park Dept.
P. O. Box 231
Arlington, TX 76012
(817) 275-3271

Chuck Sparks
Unit Mgr. Horticulture Sec.
Parks & Rec. Dept.
201 Channing Square, Rm B-2
Oklahoma City, OK 73102

George L. Spillman, Supt.
Grounds Maintenance
Texas Tech University
Box 4219
Lubbock, TX 79409
(806) 742-3801

Stephen T. Sprehe
Landscape Supt.
Conoco, Inc.
BO & S Dept. 7WOB
Ponca City, OK 74603
(405) 767-4556

Jim Stanley
Parks Field Serv. Two
City of Benbrook
911 Winscott
Benbrook, TX 76126
(817) 249-3000

Kevin Steweat
P.O. Box 2376
College Station, TX 77841
(409) 260-3231

Jim Stone
Design and Devel. Coord.
City of Garland
P.O. Box 401889
Garland, TX 75040

Curt Stogsdill, Parks Foreman
Denton Parks Dept.
213 E. McKinney
Denton, TX 76201
(817) 566-2841

Norman W. Strong, Forester
City of Farmer Branch
P.O. Box 340435
Farmers Branch, TX 75234
(214) 247-3131

Russell Studebaker, Hrticultrist
Tulsa Park & Rec. Dept.
200 Civic Center
Tulsa, OK 74103
(918) 592-2709

Neva K. Tandy
Bureau of Reclamation, SW Reg.
Commerce Bldg. 714 S. Tyler
Amarillo, TX 79101

A. Robert Thomson
Parks & Rec. Dir.
201 Channing Sq.
Oklahoma City, OK 73102
(405) 231-3882

Bill Thompson, Asst. Dir.
Park & Rec. Dept.
825 W. Irving
Irving, TX 75062
(214) 253-2501

Mark Thornton, Director
Allen Parks & Rec.
One Butler Circle
Allen, TX 75002
(214) 727-9171

William Thornton, Dir.
Whitesboro Parks & Rec.
Box 340
Whitesboro, TX 76273

Bob Tickner, Superintendent
Denton Parks Dept.
215 E. McKinney
Denton, TX 76201
(817) 566-8270

Ken Unkart
Parks & Rec.
P.O. Box 11
Grand Prairie, TX 75051

J.A. Vallandingham
Supervisor of Parks
P.O. Box 1952
Longview, TX 75601
(214) 757-4555

Ronald D. Warner, General Mgr.
Buffalo Springs Lake
P.O. Box 521
Lubbock, TX 79408
(860) 747-3353

Strick Watkins, Director
Parks & Rec.
P.O. Box 1971
Amarillo, TX 79186-0001
(806) 378-3036

Ongie J. Watson, Beach Supt.
Galveston Beach & Parks
5720 Avenue Q
Galveston, TX 77550
(409) 744-6393

Tony Webber, President
Visual Spectrum
2001 68th Street
Lubbock, TX 79412
(806) 745-5008

E.C. Wegner, Foreman
Box A, 532 W. Main
Yukon, OK 73099
(405) 354-8442

Don Wendell, Rec. Supt.
City of Plano
P.O. Box 358
Plano, TX 75074

Don C. Wheeler
Landscape Architect
Abilene Community Serv. Dept.
P.O. Box 60
Abilene, TX 79604
(915) 676-6216

Larry Whittiker
Dist. Sales Mgr.
Spring Valley Nurseries Inc.
Rt. 3, Box 1599
Broken Arrow, OK 74012
(918) 266-1063

Max Wiens, Asst. Dir.
Park & Rec. Serv.
200 Civic Center
Tulsa, OK 74103
(918) 592-7850

Alan Wilks
Park Maintenance Suprv.
Dallas Parks Dept.
3012 S. H ampton
Dallas, TX 75224
(214) 339-4116

Don J. Willding
Goldthwaites of Texas
2700 Forest Lane
Dallas, TX 75234
(214) 241-3987

Bob Woodruff
Asst. City Manager
City of Plano
Box 358
Plano, TX 75074
(214) 424-6531

Michael E. Woody, Planner/LA
Tulsa County Park Dept.
2315 Charles Page Blvd.
Tulsa, OK 74127
(918) 583-0032

John Yarbrough, Park Supt.
Texas Parks & Wildlife
Rt. 2, Box 108
Grapeland, TX 75844
(409) 687-2394

Richard Zavala, Park Suprv.
City of Dallas
4301 Pennsylvania
Dallas, TX 75201
(214) 421-5285

Keith R. Zwick, Landscape Arch.
Huddleston and Associates
180 Cook
Denver, CO 80206

TEXAS TECH STUDENT ROSTER

Amlung, Lisa M.

Bilbo, Michael James

Burt, Deidre Ann

Coursey, Scott S.

Davis, Sean D.

Grimes, Susan

Hardin, Kenneth Lee

Hickey, David H.

Hoehne, Celeste

Johnson, Jeffrey P.

Kirkpatrick, John B.

Leatherwood, Charles

Mullins, Gina R.

Richards, Diane

Steavenson, Karl A.

Tabor, William Bryan

Weldon, Daphne M.

Wolf, Troyce

TEXAS A & M STUDENTS

Harting, Jeff

Stewart, Kevin

Front Row: Kevin Stewart, Jeff Harting
Middle Row: Daphne Weldon, Deidre Burt, Susan Grimes, Karl Steavenson, Lisa Amlung, Charles Leatherwood, Bryan Tabor, Gina Mullins
Back Row: Bill Kitchen, Jeff Johnson, David Hickey, Troyce Wolf, Sean Davis, Mike Bilbo, Celeste Hoehne, Barry Kirkpatrick, Scott Coursey

BEST COPY AVAILABLE

GENERAL SESSION PRESENTATIONS

Wilderness: A Choice for the Future.
Joe Mehan

Welcome to Texoma.
Clay McDermeit

Land Acquisition Techniques at Reduced or No Costs for Public Park and Recreation Departments.
Ed Legg

Reorganization of Metropolitan Parks and Recreation Departments-An Update of Dallas, Austin and Tulsa.
Leonard Ehrler, Jr., Sandra Matney, Dale Cox

PROGRAM AND PARTICIPANTS - 1984

Solar Energy for Water Heating Systems and Other Uses as Applied in Texas Parks and Wildlife Department Installations.
Alton Franklin, Edwin Mole, Ken Newman

Trees in the Urban Landscape.
E.B. Fish, Jon E. Rodiek

The Arbor Villa Triangle: The Neighborhood, Parks and Recreation and the Users.
James E. O'Shea, Mark McHenry

Reorganization: A Wilting Flower Can Bloom.
Sharon Prete, Steve Beachy, Roger Scott, Robert Tickner

Employee Orientation and Counseling.
Marie Scalzo, Eddie Hueston, Mike Brownlee, Steve Miller, Darnce O'Neal, Richard Zavala, Gary Morgan, Milton Martin

Shore Land Management and Erosion Control Practice for Lakes and Reservoirs.
Dave Sutton, Garrett Gill

Designing, Funding and Maintenance of Botanic Gardens for the 21st Century.
Paul Mitchell, Andrew Pierce, Henry Painter, Shannon Smith, David Nivens

Self Composting Toilet Units in Back Country Installations as Used by Texas Parks and Wildlife Department.
Robert Rayburn

Signs and Sinage.
Bobby Overman

Downtown Revitalization.
Keith Zwick, John Sellars

Employee Orientation and Training.
Rick Holland, Dewey L. Shroyer, Donna Pond-Watson

Park Planning for a "Nimbyocratic society".
John V. Blackburn, Stephen C. Beachy, Andrew Czimskey

Risk Management and Safety.
Kit Barkan, Bill Runnoe, Kris Marek, Terry Kidder

Facilities of Outdoor Athletics and Recreation.
Jerry Darter, Terry Cheek, Lawrence Maloney

Gardens with Themes.
Russell Studebaker

Computer Technology in Irrigation and Landscape Management.
Mick Hynes, M.C. Engelke

A Three Round Bout-Who's Best?
Stan Johnson, Gary Morgan

Land Acquisition Issues.
Bob Woodruff, Robert Pope, Jim Stone, Tom Lowrance

Don't Look at Me in That Tone of Voice: How Non-Verbal Communication Affects our Ability to Communicate with and Understand Others.
C.W. Metcalf

"Camp Chicot: A Case Study of the Development of a Residence Camp for Handicapped Individuals.
Joseph Popadic, Sadik Artunc

Volunteers.
Paul Boorman, Jay Ellington, Sylvia Royster

Bridging the Gap to More Effective Communications.
Donna Pond-Watson, Betty Webb

Arbor Day. How to Make It Work.
Rob Doye

Beautification at Half the Costs and Effort.
Al Johnson, Bill Sharp

Urban Rivers.
Jackie Bubenik, Dan Kamp, Max Robertson

Superintendent's Corner
Bob Tickner

Brag Night.
Jim Fox, George Spillman

Banquet:
Leonard Ehrler, Jr., Master of Ceremonies
C.W. Metcalf: The Humor Option: How Humor Affects Mental and Physical Well-Being.

Student Professional Meeting.
Maxine Mull

TABLE OF CONTENTS FOR WORKSHOP SUMMARIES

Solar Energy for Water Heating Systems and Other Uses as Applied in Texas Parks and Wildlife Department Installations	25
Don't Look at Me in That Tone of Voice: How Non-Verbal Communication Affects our Ability to Communicate with and Understand Others	27
Land Acquisition Issues	32
Beautification at Half the Cost and Effort	36
Employee Orientation and Counseling	38
The Arbor Villa Triangle The Neighborhood, Parks and Recreation and the Users	41
Arbor Day - How to Make it Work	43
Trees in the Urban Landscape	45
Facilities for Outdoor Athletics and Recreation Current Designs	53
Computer Technology in Irrigation and Landscape Management	55
A three Round Bout - Who's Best	59
Signs and Signage	61
Park Planning for a "Nimbyocratic Society"	63
Employee Orientation and Training	67
Risk Management and Safety	69
Self Composting Toilet Units in Back Country Installations as Used by Texas Park and Wildlife Departments	73
Urban Rivers	75
Superintendent's Corner	77
Reorganization: A Wilting Flower Can Bloom	79
"Camp Chicot: A Case Study of the Development of a Residence Camp for Handicapped Individuals"	84
Volunteers	104
Downtown Revitalization	114
Shore Land Management and Erosion Control Practices for Lakes or Reservoirs Controlling Erosion and Sedimentation on Shorelands	116 119
Botanic Garden Maintenance	113

SOLAR ENERGY FOR WATER HEATING SYSTEMS AND OTHER USES AS APPLIED IN TEXAS PARKS AND WILDLIFE DEPARTMENT INSTALLATIONS

Alton Franklin
Edwin Mole
Ken Newman

Solar heating is rapidly maturing, and the Texas Parks and Wildlife Department in Austin is wasting no time in developing solar units for parks. Alton Franklin, Chief Development and Repair Division of the Texas Parks and Wildlife Department, reported that in 1980 the first complete solar unit was put to use in the parks. In addition, two more solar designs are to be in operation by March of 1984. Franklin expressed intense excitement in the development of solar units and he intends to continue to promote the use of solar energy for parks.

Solar energy systems have become a reality in today's parks and currently Blanco State Recreation Area has installed a solar heating system to heat water for showers and lavatories.

Research was done to determine the economic feasibility of using solar energy, and two things quickly became apparent. First, state parks seem ideal candidates for solar energy use because peak attendance at most parks follows the seasonal weather variations, and thus reap insolation or available solar energy. Second, it was found that with electricity as an alternate fuel solar energy is an attractive investment, except in those situations where a park receives special pricing advantages.

Solar energy is being used today, but is this type of energy a new idea? No. According to Edwin Mole, Architect Assistant of the Development and Repair Division of Texas Parks and Wildlife Department states that the use of solar energy began as far back as 500 B.C. The Greeks were the first to capture the sun's power and use it to heat their homes, followed by the Romans who invented the first greenhouse-type building with glass covered windows that faced the south. Mole explains that as time passed the hot box and solar cooker were both invented and by the nineteenth century the first solar water heating tank was introduced. Thus, in 1909 the Day and Night Solar Heating Company was founded by William Bailey. Bailey begain producing solar heated water tanks and by 1920 over a thousand solar tanks had been sold.

However, there has been continual controversy surrounding the use of solar energy in parks according to Franklin. The real battle has been in convincing the park superintendents that even though the initial cost of solar projects is expensive, the payback of the capital expense plus 8 percent interest is only 7½ years.

Involving cost there are still other ways to cut the energy bill according to Ken Newman, and that is by energy conservation. Newman, who is the Mechanical Engineer of the Development and Repair Division of Texas Parks and Wildlife Department pointed out three important energy conservation standards: 1) caulking around doors and windows, 2) insulating the walls and attic, and 3) providing shade for the building. He also added the importance of having efficient systems like the heat pump and programmable thermostats. These energy conservation standards are all ways to cut costs without even considering solar energy.

However, Newman's next topic was on active solar heating. He stressed the sun's resourceful energy by large collectors on the top of the roof and then store the energy below creating an insolation effect and not insulation. By collecting and storing this energy heat is produced and used to heat water in Texas parks today.

In summary, the panel confessed to not knowing the whole spectrum of solar power, however, with the success of the solar units in Blanco State Recreation Area, steps are being made to lower the cost of heating by using the sun's natural heat. With the payback period of 7½ years and an annual savings of possibly $1,249.00, the Texas Parks and Wildlife Department Repair Division is striding forward and developing brighter skies for Texas parks.

DON'T LOOK AT ME IN THAT TONE OF VOICE: HOW NON-VERBAL COMMUNICATION AFFECTS OUR ABILITY TO COMMUNICATE WITH AND UNDERSTAND OTHERS

C. W. Metcalf

C. W. Metcalf's work for the last twenty years has dealt with non-verbal communication and he has worked mainly with large corporations in improving people's ability to communicate with each other.

Non-verbal communication (NVC) is not considered "body language." NVC is the ability to understand and communicate with other people. Today, NVC has become a more popular training in many corporations because people are beginning to realize that if you can't communicate and understand other people, then nothing else will work. Interpersonal communication is the greatest concern that any group that works together should have.

Park and recreation organizations are up against a great challenge that has started in the American work force for the past eight years. This challenge is rapid change in structure of organizations. However, parks and recreation organizations have responded to the potential of change better than any other organization today.

The essential element of NVC is that what you have to learn from watching other people has more to teach you about yourself than it has to teach you about them. Moreover, the main reason that information does not get transmitted, retained, and utilized in any organization almost always boils down to a communication breakdown on an interpersonal level or a non-verbal level. A few days after a baby is born, he begins to process information visually and from this point on in his life, he begins to develop a mental card catalogue. This mental card catalogue of visual experience falls into the realm of visual prejudice and visual preference.

Each person has his or her own private dictionary of non-verbal communication and they absolutely believe that what you see is what you get and the truth is that what you get is what you see. You are limited in what you hear, obtain, and understand by those sets of visual prejudices and preferences. If you don't care enough to communicate with other people, then very little will improve in the work place. This element of communication has been connected to most interpersonal communication breakdowns. Until you know what your visual preferences are, you

are not communicating. You must also be able to change your prejudices if they do not work for you. Basically, when you talk about change, you talk about changing other people but never yourself. Your ability to communicate and understand other people is the vital element in your capacity to master change and survive happily and well in a competitive world. Two characteristics of park and recreation people are:

1. The general response to this eminent change in your career field seem to beam back a sense of challenge rather than threat as compared to other organizations.
2. A general sense of camaraderie which proves to be one of your greatest strengths when you learn to work together.

The worst disease that affects most corporations and businesses is the "them" syndrome. If we could only change them or him or her to management or... The last thing people say is "what can I do to change the way I am dealing with things to make a difference here." In truth, it is the only one you can change.

You will have to open up your box of secret preferences and prejudices so you can improve yourself and your communication skills because you are only as sick as your secrets. Those secrets will kill you if you don't get them out in the open and air them one way or another. The World Health Organization conducted a study to see why people got sick. W.H.O. started with a study on why people got early cardiac problems. Two similar characteristics were found to have caused the problems:

1. Job dissatisfaction
2. Marriage dissatisfaction

The two most likely elements to make you sick are being unhappy in your job and being unhappy with your marriage. In both situations, communication is the primary element.

How do you find out what visual preferences and prejudices you have? The method that will be discussed here takes only ten minutes a week. In order to benefit from this method, you must buy a small pocket journal to carry with you constantly because it can become the key to you breaking your own visual preference/prejudice code. Once you do this, it is a self-taught process. When you begin your journal, you will basically be watching for three elements. These three elements will be called casting keys which are the most commonly used keys when making judgements and assessments on people's character, dependability, trustworthiness, and believability. Casting is something that everybody does. It is that little internal conversation you hold

inside your head that is constantly criticizing other people. The main reason that most people are afraid to talk in front of a large group of people is not because of what they have to say, but because of what they look like.

This casting process is a very important part of you finding out what your prejudices are. This whole process centers on you, not the other person. Your responsibility and the limits of your responsibility stop right here. The three main casting keys are:

1. Walk
2. Faces
3. Gestures

The first step in the casting keys is to watch the way other people walk. Using this method, it is important that you use your journal to record your notes or you will not benefit from this exercise. When you watch people walk, you will record three events:

1. Write down what you see
2. Write down what you are thinking
3. Write down your casting

Two items which you should watch for when observing people walk, is their lead and quality. Everybody leads with a certain part of their body which means they move from a specific place when they walk. This lead creates an impression and different people will receive a different impression of that person's character. The reason this is important is because the way people move is one of the primary elements in your visual structure of what type of character that person has and most people don't even realize that they do this.

Most people have a dominant lead or motor from which they move from such as: head, chest, pelvis, or knees. Quality simply refers to the style in which people walk such as: tense, relaxed, carefree, upright, rigid. In your journal, you will record a person's lead and quality. Write down what you think, and cast that person in a character role. Everybody casts people into character roles because people have a biological, genetic, inbred need to identify friends and enemies and this is the basis of why people criticize and mentally cast character roles of other people.

The second element of the casting keys is faces. Faces are so important to recognition of and dealing with other people, that nature has provided the brain with a specific area that does nothing but recognize, catalogue, and remember faces. The face

is the only part of the body that has a receptor side in the brain for remembering and cataloging. It is very important in our perception of other people. When observing faces, watch for three main elements:

1. Structure
2. Listening
3. Speaking

The first step in observing faces is to write down the first structural formation of the face that you think are most noticeable, such as: eyes, ears, hair, mouth, beard, etc. Second, write down what you think about that face, such as: stern, happy, tense, or nervous. Third, cast the face into a character role, such as a lawyer, sheriff, or snake oil salesman. The casting is a friendly way of accessing that personal card catalogue. The listening and speaking elements simply refer to the expressions a person makes when either listening or speaking. You will record these with the same method that you used on facial structures.

The last visual element that is discussed is Gesture, which plays a major role in male and female communications in the work place. Women, in this culture, are generally about 70% more sensitive to non-verbal communication than men. This percentage has been proven by the P.O.N.S. (Profile on Non-Sensitivity) test. In the work place, male and female communication is a real challenge in this particulararea and gesture is one of the areas where a large percentage of male and female communication breakdown takes place. Gestures can be broken down into four groups:

1. Orbit
2. Coloring
3. Speaking
4. Emphatic

A gesture orbit is defined as a certain area in which a certain individual expresses his or her emotions by the movement of their hands and arms. Some people have a very small contained area in which they move their hands and others may have a large area by outreaching their arms completely to express an idea or emotion. Gesture orbit is important because it falls under the heading of kinetic identity which simply means that people tend to listen to, accept, and process information from people who are more like them than unlike them. This does not pertain to color, hairstyle, tallness, shortness, etc., but in terms of three specific areas such as gesture. Since our visual habit patterns are based upon our own expression, you can improve your communication ability with another person by simply altering your gesture orbit pattern to the orbit space of the person in

which you are communicating with. So when you use your journal, watch for people's different orbit patterns and record them.

The three remaining elements concerning gesture are: coloring, speaking, and emphatic. These elements refer to three types of gesture styles. Coloring gesture habit patterns have a pattern that is strongest or used more frequently to support an idea, emotion, or feeling at a place where there are no words. Speaking gesture habit pattern people act everything out visually while explaining a process or an event. This type of gesture uses the hands to speak and draw a picture of the action for you. Emphatic gesture is easily identified because these people are the table-pounders, palm-sluggers, and air-slashers. This gesture is a speaking dialect that uses the hands and arms to get a point across.

Now this method may seem like a complicated issued, but it is actually quite simple. This process is important to understand a person's gesture habit pattern and reflect that pattern at the appropriate time to help him or her understand you.

LAND ACQUISITION ISSUES

Bob Woodruff
Robert Pope
Jim Stone
Tom Lawrence

Jim Stone is taking the place of "Park Planner," he's going to talk about the do's and dont's as you look for park sites and also some techniques used to acquire land.

There are 10 million acres of Urban Park Land in the U. S., which sounds like a lot until you realize that it is a very small amount of recreation acreage as a whole, a problem coupled with that is 80% of us now live in metropolitan areas with a population over 250,000. All the people live where the park land is not.

One of the first steps that you have to deal with when you have a problem is, what are you doing with it before you buy it? Which comes down to needs assessment, what clientel is going to want, what the physical attachment is going to be and how you can adapt to that piece of property. What that means is Master Plan or Park Guidelines, systems or standards of how many people are going to be using the park or facility in a projected time span. By doing this we can measure the needs assessment of a particular area, the more it grows the more the needs will be.

The next step would be, what do you want to put on that piece of property? Something you need to do so you will know what to do with the land when you get it. A couple of traps you can get into deals with the Static Master Plan. I think everyone has kind of stayed away from it, because up in an undeveloped city they have a piece of land set aside saying "proposed park" that landowner knows if he can't sell it at his price he can sell it to the park and recreation department. Another one is meeting standards. One knows that there are standards set for different areas, we want to do the best we can but if the land isn't there nor will be the standards. We really need about a 1/10 ratio of park land to developed land but can get by with half of that.

After you have decided what you want to do with the land you need to start evaluating those individual parcels of land. If you have the luxury to shop around there are a number of different metrics that can be used to help you to identify the best land. The planner needs an objective manner to evaluate those so you can use one parcel against another.

Some important criteria to look for when looking for land. Location is the single most important item because it is the secret to being successful in real estate which proves true

whether you are in park planning or developing. Accessibility is another. It has a lot to do with location but also deals with how you get there. Another is topography, under which are things like vegatation, flood plain, etc. It should be in all park and recreation departments that you prolong and preserve the aesthetics of a piece of land. Another is land use. We are talking about things like zoning and surrounding land uses. These things need to be looked at to help relations with your neighbor.

Something that is becoming more and more popular in metropolitan areas is dual land use. Working with school districts and using their land after school hours for park and recreation development and use. Going in and putting more baseball fields, play areas, etc. Its becoming a very competitive market and more times than not we are coming up on the short end of the stick, but we are going to have to be more flexible to get the job accomplished.

The second speaker, Robert Pope, who took the view of the "developer" or land owner. Here are a few items that would make it easier to work with a developer. Probably the most important thing is preparation of a master plan, cities usually don't have a good master plan. As a developer, we are in to the department all the time looking at something like zoning. He may find where there is a proposed park in the future for this area or no park at all. It would be a bad time to surprise the developer in front of a zoning commission, finding out that 25% of the land goes to a proposed park. That should be in the master plan so we can find out earlier.

The next item we need to consider is knowing something about the development business which include a couple of aspects. Knowing something about land management and finding out something about the developer. Knowing the person setting across from you can keep from creating problems. Ninety percent of the developers are out for profit but how much profit varies, which goes back to knowing your developer. Talk to the realtors, find out where the hot spots are. Realtors generally know where land may be available before city government does, so keep in good relations. Knowing what the development process is, in your city. What is he going to have to do to build? What city is going to require, etc.?

Understand zoning, the power to zone is part of the general police power. Zoning power is necessary and exercised for the protection of the public health, safety, and general welfare of citizens. You have to depend on the city planner to give the rights. There are two types, legal or illegal. Transfer of

the zoning right is supposedly a legal zoning right as compensatory zoning is illegal but can always be interpreted differently.

Less-than-fee acquisition is generally less than market value. This method of acquisition was devised because of the theory that is neither possible nor desirable to commit to public ownership all the land to be reserved as open space. The most important advantage to the easement method of getting land is that it does not take the land off the tax rolls. As a developer these easements don't hurt the developing process. When the developer has large acreage of land that would be good for a proposed park the first thing he did was go see the park management. Talk to them and see if they would like to acquire this land, by acquiring land in large acres there is a better chance for a park. After land has been acquired its up to the park planner to make something valuable for this area. The most important idea for a park planner should be, be creative. Creativeness is what makes parks used more, valued more and needed more.

Tom Lawrence will play the part of the "park consultant." The park consultant is generally between the park planner and the developer. The consultant may be employed by an agency or by the city government. Not all cities have wide enough budgets for a consultant so they usually work for different types of agencies. When a consultant is called in he may just give advice or he may develop a high density plan to help cure the planner of developer's problem. You could say they are the doctor that pulls the thorn out of the planner's side.

Some strategies are used to help the city and land developers at the same time. Tentative zoning, increasing density on one tract of land while lowering density on another tract are examples. For instance, you have two different tracts of land. One tract is in a high density area, the other in a low density area. You can raise the density on one tract while lowering it on another. By doing this the high density area can be remedied for the population's needs. Working with easements is important. The general definition is an interest in land restricting the manner in which it may be developed. There are two basic categories into which all easements may be assembled positive and negative depending upon the methods employed. An easement is said to be positive if it specifically provides that the easement holders may use the property. A negative easement allows the holder to limit in specific ways, the use a landowner generally knows how all of this works.

Preserving more open space is of high concern to the consultant. When a park planner asks the consultant to come in to help them with a problem he generally sees what needs to be done. The

consultant can't take sides, he has to work with both developer and the planner.

Working together, making the right decisions, being professional at all times is what makes a consultant valuable. Helping the park planners and developers work together acquiring the right land for the right purpose. You never thought acquisition could be so easy.

BEAUTIFICATION AT HALF THE COST AND EFFORT

Al Johnson
Bill Sharp

When citizens get involved with beautification of their city, it is very effective in improving the total outlook of the city. Citizens can get involved on their own or become interested with the help of the city.

The beautification process is not left up to just the city or just the citizens. It is a matching fund process. Money and effort originate from citizens and the money and effort originate from the city.

Some of the citizens of Richardson submitted a petition to the Park and Recreation Department stating that they wanted the medians in their neighborhood beautified. The Department was unsure at first about how to go about it because they had no budget and no bonding. They took the proposal to the city council. The city council came up with the ideal of matching fund beautification. They also said that everything needed for the beautification of the medians would have to be grown, mined or taken from resources in the city and used at no cost.

Here is a summarized list of how the beautification process works:

1. Citizen group has interest and contacts the Park and Recreation Department.
2. The Park Department tells the group about the matching fund program.
3. The group talks it over and decides what to do.
4. Master plans are drawn up.
5. The plans are phased.
6. Rendering is used to show exactly what the design will look like.
7. Need to develop an itemized list of things needed for the beautification process.
8. Talk it over with the group and tell them what their responsibilities will be and how much they are willing to spend.
9. Last comes the budgetary process which occurs in May; money is available in October.

The group of citizens become involved in helping to grow the plants to be planted on the median. While the plants are growing the construction is started. The bricks that will be used are mined by the citizens. Once the plants are ready a planting party is planned. Irrigation is also included and the group helps pay for this. The water bill is payed for by the city.

The original project designs use expensive materials and difficult designs. The second phase decreases the bed area, uses different plant and structure materials, which are easier to maintain. The present design decreased the bed area even more, uses very low maintenance plant materials, plus a lot of brick and concrete.

Problems that can occur are:

1. No increase in manpower for maintenance.
2. Trouble with water locations.
3. Brick without concrete/sand mix base is unstable.
4. Availability of city trucks vs. contract.
5. Failure of clubs and groups to properly maintain their areas.

All of these problems are being dealt with in that the projects used to take 150 manhours to complete now take 105 manhours to complete. Maintenance costs have been reduced and a chemical program eliminates the need for excessive manpower.

EMPLOYEE ORIENTATION AND COUNSELING

Marie Scalzo & Eddie Hueston
Steve Miller
Darnce O'Neal
Richard Zavala
Gary Morgan
Milton Martin

There are seven definitions we use to define a supervisor:

1. A member of the management team, esp. foremen and others in management jobs, in charge of persons directly carrying out work.
2. A person in a management job forming a direct link between management and workers.
3. A person responsible for getting work done through others.
4. A person who plans, organizes, directs and evaluates work.
5. A person who applies problem solving and communication skills to jobs, tasks, activities and management and employee relations.
6. A representative of management who introduces and facilitates change in the working environment.
7. A representative of management and the workers responsible for getting results through teamwork.

Wherever people work you can expect to hear complaints. It is the supervisor's job to handle employee complaints with patience, tact, understanding and sound judgment. Above all it requires a procedure for airing and resolving these complaints and an effective supervisor who can make the procedure work. Your ability to handle complaints and grievances determine how effective a supervisor you really are.

Both gripes and complaints can grow and become formal grievances if they are not handled satisfactorily. It is important that every supervisor make sure that the conditions of employment agreed to by the organization are carried out fairly and honestly—that practice coincides with promises and policies.

It is equally important that management's rights not be infringed upon by the employee. Grievances are not allowed on issues relating to management rights. Examples include:

1. Organizational structure to be utilized.
2. Work to be performed.
3. Tools, machines and equipment to be used.
4. How work is to be performed.
5. Money to be spent in performing the work.
6. Selection of supervisory personnel.
7. Standard of selection of employees.

Let us look at some of the situations which cause grievances:

1. Work assignments.
2. Working conditions.
3. Relations with the supervisor.

Workers are often dissatisfied if the supervisors are guilty of the following:

1. Failing to set forth clear job policies.
2. Failing to plan work properly.
3. Giving too much or too little supervision.
4. Setting unreasonable work standards.
5. Failing to listen to employees.
6. Failing to delegate work authority to employees.
7. Failing to keep employees informed.
8. Allowing rumors to go unchecked.
9. Criticizing an employee in front of others.
10. Using sarcasm or ridicule instead of constructive and task-oriented criticism.
11. Being inconsistent or unfair in enforcing rules.

Recognizing a grievance is not difficult. The supervisor who wants to keep a trouble from developing should watch for danger signals. Sometimes the danger signal is a flare-up. You should suspect some dissatisfaction when any of the following signals appear:

1. Lack of enthusiasm or cheerfulness.
2. Excessive griping about the local government, the department or the work group.
3. Lack of interest in the work.
4. Excessive tardiness or loafing.
5. Too many errors.
6. Reluctance to assume responsibility.
7. Decline in output.
8. Excessive short-term sickness.

Through preventive measures an effective supervisor should catch problems when they are small and easier to deal with. When you (the supervisor) correct unsatisfactory conditions before they get out of hand, your workers will feel that you are interested in them.

Some of the important ingredients of such a "preventive maintenance" program are:

1. Talking frequently with employees.
2. Providing an outlet for complaints.
3. Observing employees and working conditions.
4. Showing appreciation.
5. Helping employees get ahead.

Sooner or later the day will come when you are faced with a grievance which you were unable to foresee or prevent. How are such situations handled? Systems for handing grievances should contain the following elements. They should:

1. Protect an employee's basic rights as a citizen.
2. Be tailored to fit the size, complexity and operating conditions of the organization.
3. Be simple and easily understood by employees.
4. Be designed to allow the employee to be accompanied or represented by an individual of the employee's choice.
5. Be written out and brought to the attention of all employees.
6. Be designed to provide a satisfactory and prompt response.
7. Be fully understood and supported by all levels of management.

Here are some of the procedures you should follow to get the best results in solving a grievance:

1. Accept responsibility.
2. Listen attentively.
3. Question the employee.
4. Get additional facts.
5. Check records.
6. Analyze alternatives.
7. Decide who has authority to act.
8. Make the decision.
9. Explain the decision.
10. Follow up on the decision.

THE ARBOR VILLA TRIANGLE
THE NEIGHBORHOOD, PARKS AND RECREATION AND THE USERS

James E. O'Shea
Mark L. McHenry

Arbor Villa Park, located in the heart of the Armour Hills neighborhood, was selected by the Kansas City, Missouri Parks and Recreation Department for a pilot redevelopment project. The first of its kind in Kansas City, the project is a cooperative venture between the City and the neighborhood, drawing upon the residents for (1) actually gathering information from the neighborhood about the park's uses and needs and (2) preparing a redevelopment plan for the park.

The Armour Hills Homes Association and the Department of Parks and Recreation, through City funds and generous donations from area businesses, have retainted Project for Public Spaces, Incorporated, the nation's pre-eminent park redevelopment consulting firm, to help determine the needs of area residents and how to make Arbor Villa Park more responsive to those needs.

The project was initiated by the Armour Hills Homes Association. Residents had noticed that the park was being used more by transient visitors than by area homeowners. The Association approached the department to "cleanup" the park for neighborhood use." At that time, an agreement was reached between the two parties for the citizens to assume many of the maintenance responsibilities of the park on a yearly basis. These responsibilities include grass mowing and grass and shrub trimming; litter and trash removal; seeding and other projects. All labor, equipment, and materials required to perform these operations is furnished by Armour Hills. In consideration of the efficient performance of the park's maintenance, the Parks and Recreation Department pays the Association $233.33 each month (the price established for the park's upkeep in 1981).

To assure proper use of this funding, the department requires that "Armour Hills shall maintain complete records and books, accounting for the expenditures of said payments, to which the Board or its agent shall have free access for inspection or auditing." An itemized statement of expenditures is presented to the Board on June 1, and any surplus monies are placed into a capital improvement fund, earmarked specifically for the park. Technical, specialized or major repairs, such as resurfacing tennis courts, are financed and taken care of by the department.

The Homes Association contracts a private landscaper to assist with providing proper equipment and labor. A turf management program was recently put into effect which had previously not been financially feasible for the park department.

The citizens of Armour Hills have taken an active interest in establishing recreational programs and activities in this single-acre, neighborhood park. "Wednesday Night in the Park" is an innovative program which allows residents to meet and enjoy summer activities ranging from band concerts to pet parades. Without the support of these citizens, this and similar activities would not be available.

The success of this project has stimulated other homeowner associations to pursue similar undertakings. "However, future trade-offs may not be available," stated James O'Shea, as there are 222 organizations of this nature in Kansas City.

The Arbor Villa Triangle represents an excellent example of concerted citizen effort echoed by support of the traditional governing agency. It will be of interest to see the progression of this project in coming years as citizen input changes and modifications are made.

ARBOR DAY - HOW TO MAKE IT WORK

Rob Doye

Arbor Day is set aside to encourage the planting of trees, shrubs, and vines around homes, along highways, and on both public and private property for beautification, energy conservation and for improving the environment.

Specific dates for Arbor Day are observed in most states by either declaration of law or proclamation of the Governor. National Arbor Day is celebrated on April 15th.

"Arbor Day was first observed in Nebraska in 1872," Roy Doye explained. In the treeless expanse of the prairie, tree planting has assumed an extra significance.

Fresh impetus for planting trees came in the 1930's, due to the "Dust Bowl" days of the Plains and a tree killing blight called Dutch Elm Disease.

Today, Arbor Day is celebrated in many ways. David Givens from Fort Worth noted his city's celebration. Fort Worth has had the honor of being selected as a "Free City, U.S.A." for the fifth year. The idea used by this metropolis is to "do something a little exciting." The Governor making a public declaration of the significance of Arbor Day is a good place to start. Another would be to plan a city-wide festival and plant trees throughout the city.

Arbor Day should also be competitive. This is an ideal time for local nurseries to schedule special sales and utilize advertising to the fullest extent.

In Tulsa, Oklahoma, student council members have purchased trees for the campus as a senior class gift. A gift of this magnitude will last a lifetime, rather than a few years.

Other ideas presented in this session were:

1. Sending seedlings home with elementary students to be planted in their neighborhoods.
2. Approaching homeowner associations, especially in new subdivisions, to utilize Arbor Day to "spruce up" the the neighborhood.
3. Ask the state agriculture extension service to provide seedlings at low or no cost for specific projects.

4. Have local civic organizations, such as the Lions, Kiwanis, and garden clubs, contribute to planned celebrations.

5. Make Arbor Day a media event by inviting local government officials to attend ceremonies.

6. Extend Arbor Day to a week or "season."

7. Hold poster contests for children.

Arbor Day is a time to be involved with nature. Make it available to all citizens.

TREES IN THE URBAN LANDSCAPE

E. B. Fish
Jon E. Rodiek

This discussion focused on three axioms of trees in the urban environment:

1. By using trees and tree masses we can shape the form of the city to create a better urban habitat without copying nature.

2. By using trees in groups in accordance with their intrinsic natural and biological requirements, not as scattered specimens, we can improve on the harmony and success of the man-made and natural environment.

3. Urban planting design philosophy must recognize the biological requirements of people and plants if the design principles are to be successful.

The aesthetic power of trees and tree masses in the urban setting brings our senses to life by providing a diversified amount of light and color shades, form, scale, texture and ambiance. This ambiance created in the urban setting is what makes trees and tree masses so much a vital part of the urban setting.

When using trees as design elements a number of characteristics need to be considered. Can these trees be transplanted into design expressions? What types of color do the trees' leaves, bark, flowers, and/or fruits produce during different times of the year? What are the shade patterns and tonal contrasts of these trees? What type of visual pattern is achieved? Will these trees provide unity, repitition, enclosure and/or a combination of the three?

Some new ideas that were considered include:

1. Merging crowns where possible. Open crowns prevent aesthetic choice.
2. Natural arrangements in cities tend to mask man-made order. Orderly rows can reflect unity and a more developed sense of place.
3. Trees should create, define, and reinforce space with the pedestrian in mind. Scale and spatial proportions to the pedestrian is important.
4. Place lines of trees as expressions of nature in the urban environment.

The grid patterns of the city have been blamed for many shortcomings of the modern city. The designer who is powerless to control technology attempts to camoflage its visual structure by introducing randomness into the functional order of the city.

Our design response is to weaken this pattern by hiding it rather than reinforcing the sense of space created there. The spatial quality of the city is sacrificed for the sake of arbitrary diversity in design.

The most important principle of urban design is spatial order through spatial definition, spatial reinforcement and the creation of new complimentary humanized spaces.

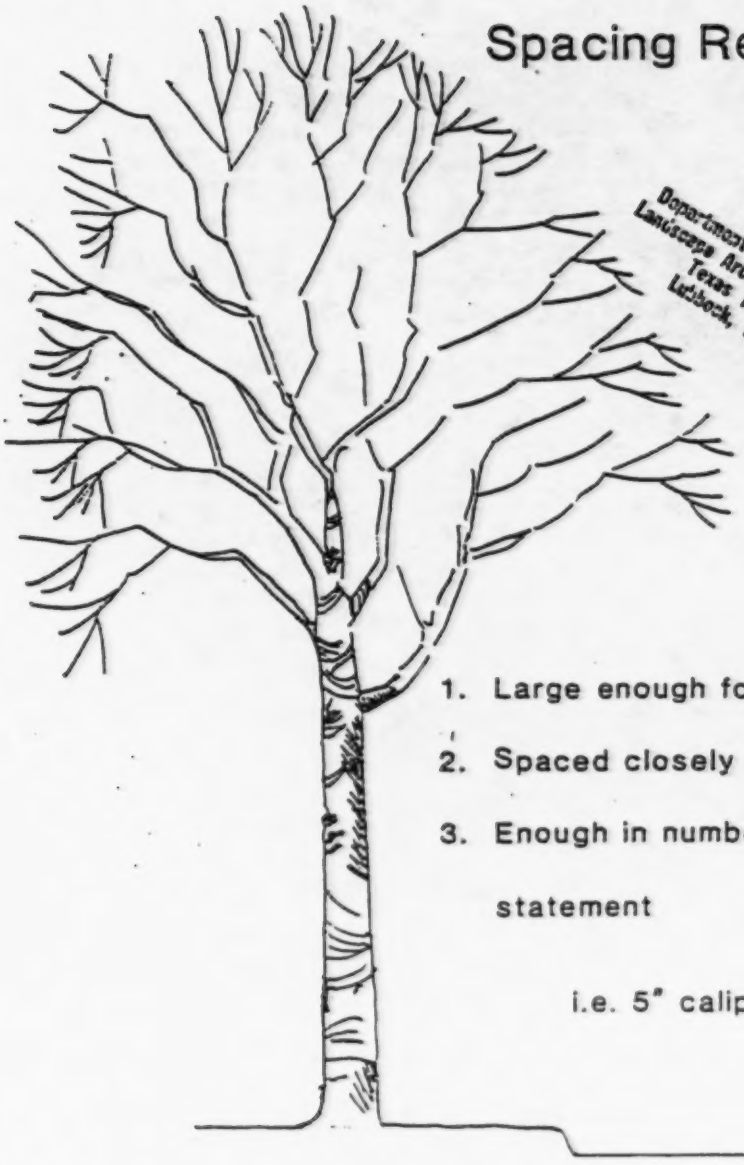
Three masses can appropriately contribute to this effort by forming horizontal spaces - vegetative ceilings and shadow patterned floors; and vertical spaces - transparent walls. These elements,when used in combination, create different volumns of enclosure through which we can physically and perceptually move ourselves.

Three patterns that reflect or amplify architectual geometry and function can improve the utility of the indoor and outdoor spaces. The arrangement of trees at calculated intervals gives the designer the opportunity to merge architectual space, streetscapes and green space in vital ways.

Three basic principles are used by the designer to accomplish this:

1. Transitions - The creation of transitions between spaces and/or buildings in ways that allow simultaneous comprehension of both spaces.
2. Scales - Trees can help resolve the conflicting scales created in a city. The scale of the building as perceived by the human being is softened by placing transparent walls and ceilings between the human observer and the architectual monoliths that surround them.
3. Light and Shadow - Light gives life to space. Manipulation of light and shade gives the urban designer the option to transform spaces into tapestries of sunlight, artificial light and shadow.

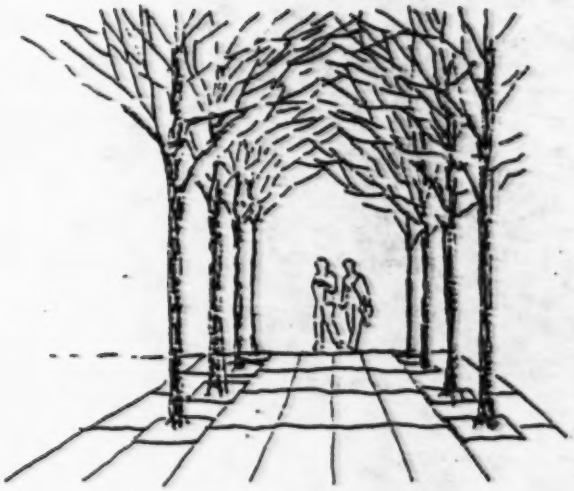
Spacing Requirements



Department of Park Administration,
Landscape Architecture
Texas Tech University
Lubbock, Texas 79409

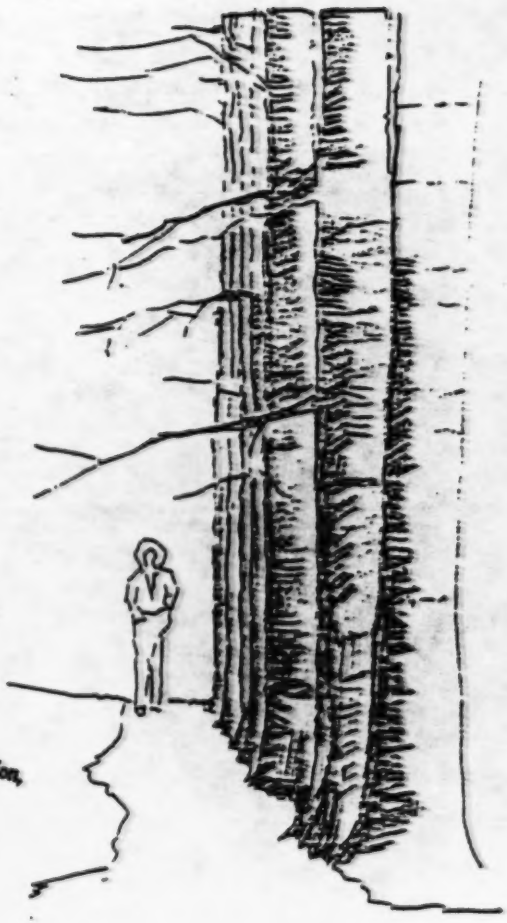
1. Large enough for immediate shade
2. Spaced closely enough for continuity
3. Enough in number for design statement

i.e. 5" caliper 20' apart



Ceilings

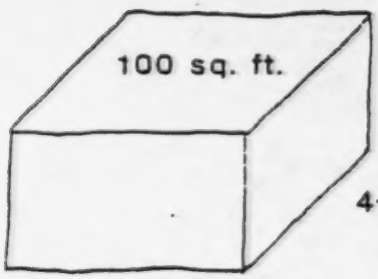
Department of Park Administration,
Landscape Architecture
Texas Tech University
Lubbock, Texas 79409



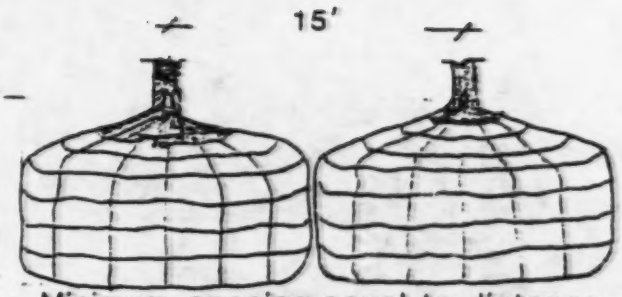
Walls

Floors

The Spatial Use of Trees



Ideal earth volume for planting.



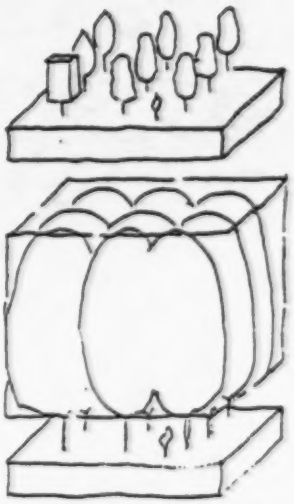
Minimum-spacing equal to distance between center line of root balls. Ideal minimum of 15' distance.

Crown System

Root System

	Natural	Planted
Crown System	1	2
Root System	1	1

Department of Park Administration,
Landscape Architecture
Texas Tech University
Lubbock, Texas 79409



400 cu. ft. at planting

24,000 cu. ft. at maturity

Visual impact of trees and crown volume.

Planting Considerations

Direct Sunlight Requirements

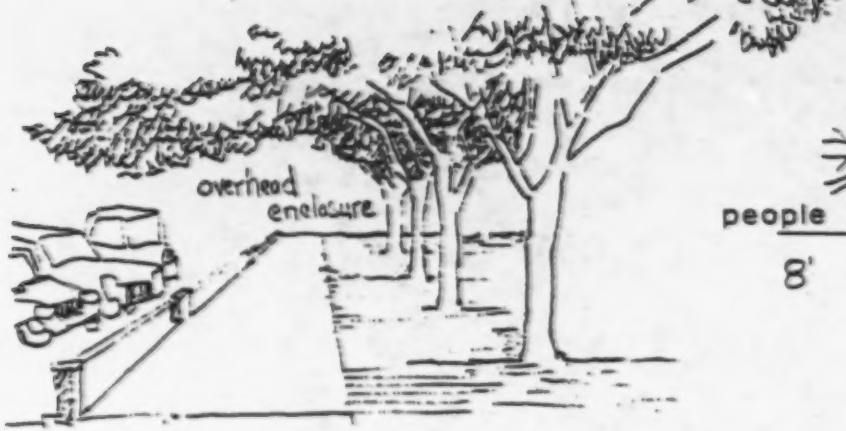
1. A minimum of 3 hours of direct sunlight each day of growing season.

2. A tree can utilize up to 25% of direct sunlight that falls on it.

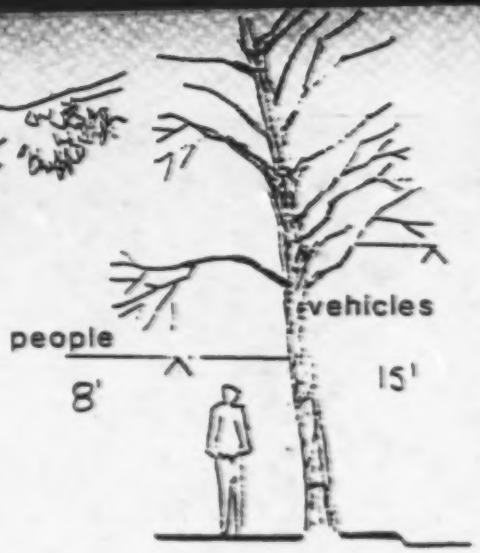
3. Below 3-5% is marginal.

4. Orientation building height and latitude help determine location.

Department of Park Administration,
Landscape Architecture
Texas Tech University
Lubbock, Texas 79409

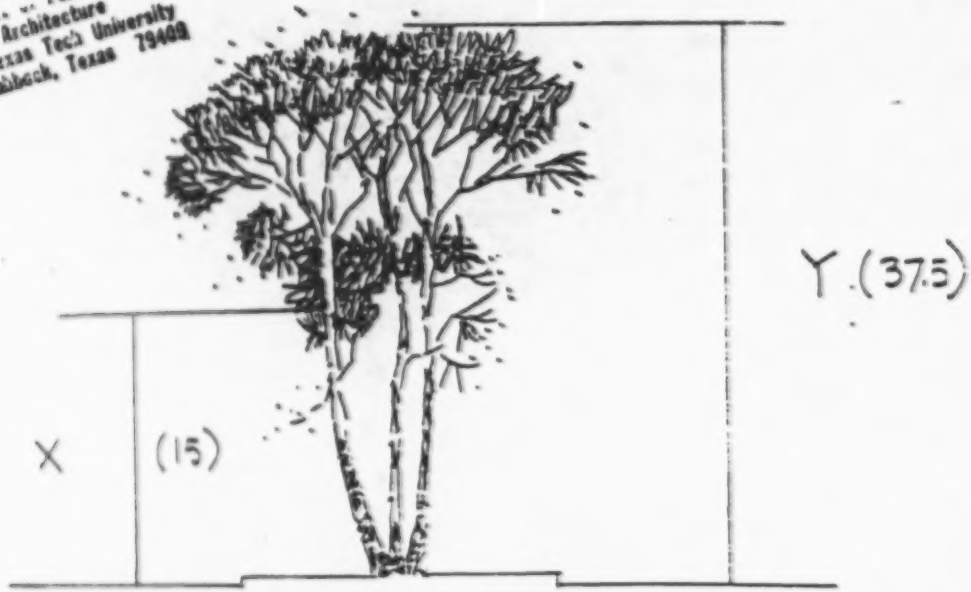


Curb Placement



Ceiling Dimensions

Landscape Architecture
Texas Tech University
Lubbock, Texas 79409

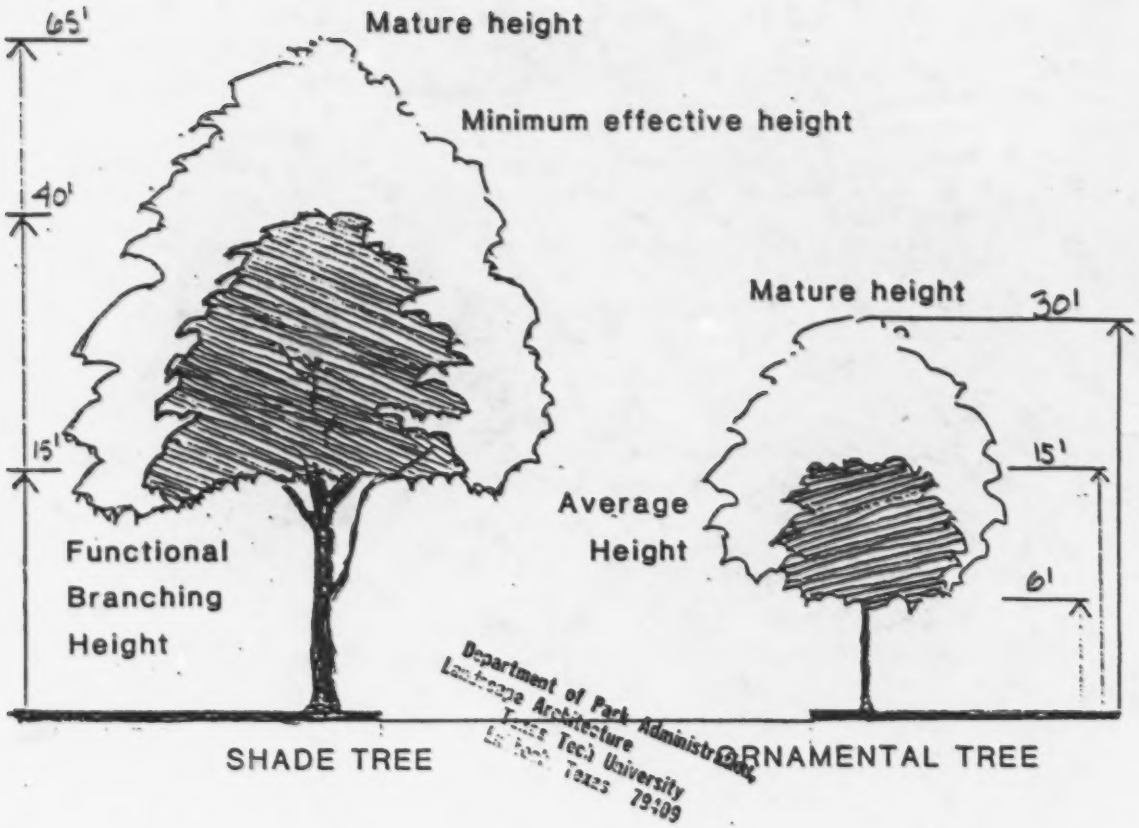


Aesthetic Proportions

X : Y

1 : 2.5

Aesthetic Considerations



Department of Park Administration
Landscape Architecture
Texas Tech University
Lubbock, Texas 79409

FACILITIES FOR OUTDOOR ATHLETICS AND RECREATION
CURRENT DESIGNS

Jerry Darter
Terry Check
Lawrence Maloney

Facilities for outdoor recreation include playing fields, stadiums, park sites, trails, swimming pools and other various forms of entertainment and leisure. The most popular of these is the stadium. Stadiums can be designed with a multi-purpose playing field including soccer, football, and baseball. The stadium can have many variations such as an official size track or the type of turf laid for a surface. Some of these variations can be allowed for in the planning of a facility and added as finances become available. It is definitely more expensive to add a track around a football field when the field already exists but it can be done provided there is the allotted space. There are many types of turf that can be laid, but the average synthetic turf costs approximately thirty dollars per square yard.

In laying foundations for an outdoor facility, whether it be for a trail or tennis courts, you must be aware and cautious of the type of soil in the area. Engineers are careful with "plastic soil" because of the great amounts of swelling and shrinking with moisture. Special precautions should be taken in an area with this type soil.

The most seasonal and desirable outdoor facility is the swimming pools. These facilities undergo a great deal of use considering they are mostly, on the average, used approximately six months a year in the southwest. Swimming facilities are becoming more and more popular but with a number of variations. No longer is all the fun in a swimming pool, but it should have a water slide at one end with a wave maker on the other. There are businesses such as "Wet-n-Wild" that specialize in water fun and are somewhat a threat in the swimming pools; though there should always be the demand for a peaceful afternoon at the side of the pool. Community swimming pools are adding extras to their facilities also. Special sunning areas with a grass slope surrounding three sides of the pool is being greatly enjoyed in some cases. The managers of these facilities feel that the satisfaction and popularity of this makes it worth cleaning the filters in the pool a little more often.

Children's pools are becoming more popular for the child who is afraid of water over his head. Sometimes a small play area near the kids pool is an advantage so the guardian or parent can watch the child in both places from the same area. This cuts down on the amount of supervision needed which makes the leisure time more enjoyable.

Foot trails and bike trails seem to be in constant demand in the larger cities. When designing and constructing bike paths several things need to be kept in mind. The trail should be no narrower than six feet and can be up to ten feet wide which is optimum. Any wider is wasted space. Bike trails will usually cross some streets and official signs should be posted on the street and on the trail. Of course, cars have the right of way and "stop" signs should be posted in open view to the biker. Ramps should be constructed to convenience the biker rather than having to climb a curb. Regular maintenance should be carried out to keep plants and grass cut back and to keep the trail in the best possible condition.

A very important aspect of outdoor facilities is lighting. One-third to one-fourth of overall facility cost is for lighting. There are three factors to keep in mind when you are lighting your facility. First, most of the light is for the spectators. Participants can see what is happening with less light than the spectators. The second factor to keep in mind is the faster the sport the more lighting is needed. Thirdly, in order for any light increase to be noticed by the naked eye, the power of the original lighting must at least be doubled.

Metal Halide is the most preferable type of lamp used for outdoor facilities. It seems to give the best light for the amount of time, for the energy needed to operate it. It is the most efficient. The average operating cost for a football field with fifty-four fixtures is approximately $3.75 per hour. About twenty percent of the operating cost is due to bad aiming. It is difficult to light the area needed, without disturbing the nearby residents, and without putting a glare in the eyes of the participants. If the light could be directed to where it is needed most without any waste you could be operating more efficiently.

"Facilities for Outdoor Athletics and Recreation" is designed to make you aware of the different precautions, ideas, and costs for constructing and operating your outdoor facility.

COMPUTER TECHNOLOGY IN IRRIGATION AND LANDSCAPE MANAGEMENT

Mick Hynes
M. C. Engelke

> Computers are here, it's something that like it or not, we're going to have to be aware of, to become familiar with and to try to implement within the parks and recreation management.
>
> Mick Hynes

We're still irrigating like we did fifty years ago, 20 minutes a day ought to cover everything—rain or shine. Good Management of an irrigation cycle is extremely important because water conservation is becoming more important. Looking to the future, we need to find ways to conserve water, realy conserve water and one way is by the park and recreation people using proper management tools...a computer.

Computers are used at home to balance checkbooks, at businesses to manage labor cost, wages, and inventory. Parks can use computers to manage water. How to do this is not answerable yet. The hardware is available, but the research is not there. It is coming, but it is not there yet.

At this point, M. C. Engelke took over the floor and began by saying that we must be "good stewards of this earth," that we need to take care of our future. Turf is just not there to look good there are many other aspects much more important.

<u>Conservation and Stability</u>

soil — water

landscape

<u>Climatic control</u>

heat dissipation — glare
air pollution — noise

<u>Aesthetic Value</u>

real estate — ornamental

mental and social health

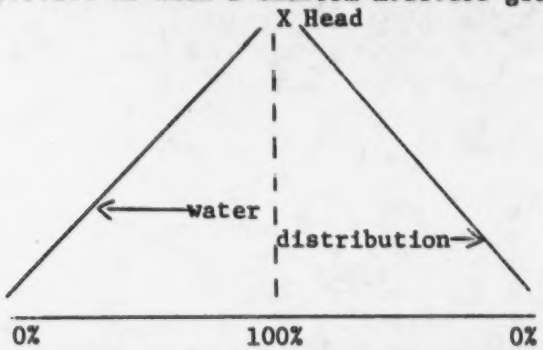
<u>Recreational</u>

sports turf — park

physical health

Compatible plants need to be put together to keep turf balanced. There are many factors to look at when selecting plant material. (1) Moisture-quality and quantity, (2) Temperature-heat and cold, (3) Light-Shade, (4) Wind (5) Nutrition.

Mr. Engelke suggested that a Linear Gradiant Irrigation System be used. This is a mechanical tool that is simple and efficient and will provide us with a uniform moisture gradient.



This is a single line system. The closer to the head the higher the amount of water, as you come away from the head there is a rapid lineal decrease in the water supply. By planting different species across the field we will be able to pinpoint within 2-3 years what the optimum moisture requirement for these grasses is going to be. It will tell us which stages to be most concerned with, what kind of management do we need to give plant material to insure rapid establishment, and will determine environmental limitations of the different grasses we use. When this information is available we will then be able to set up hypothetical situations with the help of a computer and be able to answer questions such as, what is the fertility rate of different species? What is the response of the species? If we cut back water and fertilization can we maintain our quality? How much water is really needed?

Three systems are presently under way in El Paso, Snyder and North Dallas. This will allow us to accumulate information about the whole turf grass ecosystem so we can develop a management system that will take into consideration the genetic composition of plant material, climatic extremes, wind, geographic distribution, soils, and traffic.

Ultimately we will be able to provide you with enough information and you will be able to modify this information to match your specific needs so that you can make wise decisions about irrigation with the help of a tool—a computer.

BRIDGING THE GAP TO MORE EFFECTIVE COMMUNICATIONS

Donna Pond-Watson
Betty Webb

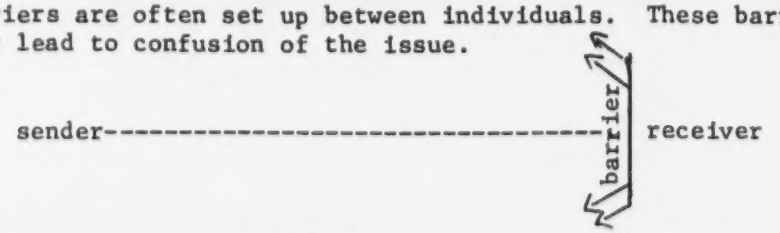
The basic form of exchange between people is communication. The average person uses 2,000 words a day and 500 of these works have over 14,000 different meanings. Everyone has different concepts about what they hear and although we are all hearing the same thing we attach our own definitions.

Basic Model of Communication

sender	message	receiver
receiver	message	sender

This message process between the sender and the receiver is what this report is about. The message area tends to be "gray" or fuzzy." 93% of our communication is non-verbal, that means only 7% has actual meaning. At this point of the session Betty Webb asked for a volunteer for an experiment. She picked a number between 1-100 and asked the volunteer to guess it in 4 chances. The first attempt was just a ramble off of four numbers, and Betty offered no response. The volunteer was then given the test again except this time Betty offered the veral response of "no." The third and final time the volunteer attempted to guess the number, Betty replied to each answer by saying "higher" or "lower." The more feedback the volunteer received the closer he came to the picked number, until finally in the third attempt he correctly guessed the number. The point that was made here was how can you as a supervisor, communicate with your employees if they have to second guess you? You must know the message before you can send it. In terms of communication with an individual, what information are you really giving to your employees?

Barriers are often set up between individuals. These barriers only lead to confusion of the issue.



There are many causes of barriers between people trying to communicate, some of them are:

1. Lack of common background
2. Disinterest
3. Serious difference in opinion

4. "Generation gap'
5. Dress
6. Initial impression
7. Formality/informality
8. Physical barriers—desk, position of supervisor at meetings, etc.

To make sure your employees are receiving your messages you need to be sure you are breaking down barriers and getting some feedback from them. The need for feedback was illustrated by an experiment that those attending the session participated in. Participants paired up with another person and talked about who influenced your life the most. One person was to do the talking and the other was to remain totally silent. After a given amount of time the roles reversed. When the experiment was over, a poll of group reactions was taken. The general agreement was that the person talking felt uncomfortable, inhibited and anxious. Most people when communicating assume a give and take in conversation. When there is no reaction, no feedback, from the receiving party you feel like you have lost control of the situation.

Although communication is a very broad topic that could be discussed all day. Betty Webb gave a general overview of the basic problems most of us encounter everyday just trying to talk to other people. By being aware and breaking down of barriers, to giving and receiving feedback, the lines of communication between supervisors and employees can be opened up.

A THREE ROUND BOUT - WHO'S BEST

Stan Johnson
Gary Morgan

This session was billed as "a knock down, drag out battle of a commercial contracting company vs. an agency grounds maintenance operation."

The "knock down, drag out," that many came to see, never emerged. Instead it was a mostly controlled question and answer session.

Pro's and con's for contracting out services as seen by Dallas PARD:

Pro's

1. Budget control - contracting provides a known fixed cost
2. Private agency assumes all overhead
3. Reduced capital outlay
4. Increases morale by contracting unfavorable jobs (e.g. median litter pick up).
5. Decreases personnel problems
6. Allows more work time for pure park problems.

Con's

1. Increased administrative costs - having to take and review bids and inspecting work done by contractors
2. Must retake new bids
3. Contractors are less sensitive to the public
4. Contractor default

Professionals shared their views of contracting. Problems that have been incurred with contractors were presented, but positive experiences with contractors were also shared.

When the point of quality of work came up, tempers came closer to flaring here than at any other time. Mr. Johnson, who contracts out to private firms while also maintaining Las Colinas, said contractors do a better job than public agencies due to the fact that their contracts come up for review every year, and if they have not provided good work at all times, then they stand the chance of losing a good contract. Some public PARD officials expressed strong opposition to this. They raised the argument that public agencies can and do the same quality work as the contractors. Pride in work was evident as this point was argued.

In the end it was agreed that contractors can be a valuable asset to city PARD's, but should be used mainly to save money, and if they can increase efficiency, but they should not be used on the pretense that contractors do better work than the public agency.

SIGNS AND SIGNAGE

Bobby Overman

Signs and Signage was a siminar about the different types and different ways to use and to make signs in the park environment. It was conducted by the Superintendent of Planning and Operations for Colorado, Mr. Bobby Overman.

Mr. Overman stressed the fact that there are many different needs for signs. He also said that "everyone has a different need for signs." There are many different reasons to have signs, these reasons all pertain to a message you are trying to convey. There are signs for safety, directions, nature information, memorials and even question-answer signs.

Mr. Overman talked of the materials you should and should not use in different climate and environment. There are certain woods and metals that are more durable in different climates and there are types of near vandal proof materials you can use.

Signs are often selected by their shape, color and size. If a sign is in front of a group of dark colored trees you would not want to have a dark colored sign. You would want a strong, bright colored sign that stands out. Lighting is also very important, but is also a long term cost factor. Lighting can often be compensated for by using floresent colors that reflect light from on-coming cars.

There are many different ways to make signs, some being more cost efficient than others. Here is a list of the most commonly used signs:

1. Silk screen
2. Routage
3. Sand blasting
4. Cook-on finish
5. Photo metal
6. Symbols

Silk screen can be used over and over; therefore, it is very cost efficient. Routage is one of the most popular ways to make signs, it is fast and cheap. Sand blasting is also a very popular and relatively new way to make signs. Cook-on finish is good, but quite a bit more costly than the others. Photo metal is an excellent way to show a picture of the

future plans of a site. Symbols such as an arrow pointing up, down, or to show a curve in the road are very effective in getting the message across.

Signs are a useful and important part of park and recreation areas. Mr. Overman concluded by expressing the importance of signs and how using certain techniques can save the taxpayer money.

PARK PLANNING FOR A "NIMBYOCRATIC SOCIETY"

John V. Blackburn
Stephen C. Beachy
Andrew Czimskey

"Nimbyocracy", what is it? The theory that everyone wants change as long as it does not take place in their backyard. Nimbyocracy is observed on all levels. The government wants budget cuts—but not in their backyard. Developers construct apartments in other people's backyards, but become nimbyocratic when another developer suggests building apartments in their backyard. Nimbyocracy is all very understandable, since a backyard represents privacy and security for most.

Stephen Beachy, Director of Parks and Recreation, College Station, Texas and Andrew Czimskey, Assistant Director, Recreation and Parks, College Station, Texas presented how they, along with the city council overcame some nimbyocrats to build a new city park.

TO: Members of the Parks and Recreation Committee and the City Council of College Station

FROM: Interested Citizens of College Station

For several years, and more specifically for the past year, citizens of College Station have been interested in the establishment of parks in our city. Petitions were circulated showing the desire for and the need to purchase 10 acres of the tract of land known as the Holik tract for a park, this acreage being property that is south of the Haines Extension.

This group of citizens is interested in parks all over the city and from their efforts and that of the Parks and Recreation Committee and the City Council a bond issue was presented to the voters and it passed. Item 2 of Proposition 4 was Park Acquisition and one of the sites to be purchased was a 14 acre park near Welsh and Haines Extension. $200,000 was the amount set aside for this park. In all discussions leading up to this the site was to be the property south of Haines. This area has many trees and the site of a lake. During the last four years petitions have twice been circulated. The first one had over 300 names and the second one (which was in 1977) had 221 names. These signatures came from individuals who were registered

voters and who lived all over the city. At the time of the last petition each person who signed was asked if the park land was purchased would they be interested in making contributions of time and/or money to develop the park. All but one person said yes. Many wanted to make their contribution of money at that moment. These people are individuals who live in the surrounding area and are not just the dozen or so whose property adjoins the area.

Now that the city is in a position to purchase the land (after the bonds are sold) and interested citizens are eager to have this accomplished, it has come to the attention of this group that there is consideration being made to change the site of the park to the north side of Haines. If the citizens voted to purchase land believing that it was the property in the Holik tract that is south of Haines, can the Parks and Recreation Committee and the City Council change the plan? The reasons for changing are summarized as:

1. The developer, having waited while the city made a decision and the time limit having expired, would like to proceed with the development and would like to build on the south side of Haines.

2. It is the site that the consultant David Reed recommended be a park. It was his recommendation that the area be 14 acres. The citizens originally asked for around 10 acres.

   a. Reed stated that many areas in the city which are labeled parks are marginal areas which are not suitable for building and for the same reasons some of them are marginal for park use.

   b. He further stated that there are no viable neighborhood parks in the area. This would allow the city to have a park that meets the criteria to be a park as set out in recommendations by National Park Recreation Standards.

3. The area is a wilderness area and has many trees, grapevines, wild flowers and other habitat that would make a unique park. It is a natural area that could be enjoyed by the whole city and in particular the residents of this area of the city. This area needs a PARK. The population is dense and becoming more so. There are many apartments and homes in the area. When the city planners used half mile circles from existing parks to show the areas needing parks this area qualified as a potential park.

a. It is an area that children and adults alike could get to easily.

b. It is an area where classes, groups from the Junior Museum and others could have field trips and observe ecology.

c. The area north of Haines does not have adequate trees. The old giant mesquite is becoming rotten and is not viable to be an accent point for a park. The area north of Haines does not have the same ecology and is not suitable for a park.

d. A green area is preferred over more housing which means more people and more traffic.

4. It is the belief of many that they would hate to purchase a house which had been built on a fill such as would be needed in the area south of Haines. The area, with only a minimum amount of work, most of which could be done by citizens, would be a very desirable park.

5. The trees are well spaced. They add to the beauty and wilderness which enables park users to privacy and enjoyment. This park would provide paths and opportunities for study and individual enjoyment of its walking around in the woods space and natural features. Athletic facilities are provided at other sites. This site to be of natural beauty to be enjoyed by all.

6. The park can be reached from Dexter and Haines, and from Welsh if the additional property is purchased. It is desirable for parks to have access. If the land north of Haines is used and a row of houses is built along the Dexter side, access would be more difficult.

7. When houses are built in the area the water will run off 50% faster than it does now and it will cause increased flooding below. The homes located below the area have been flooded only since the lake was drained. If the land is left natural this would slow down the run-off and be a protection to the homes below as well as supply a green area for this neighborhood.

The cost of the development can be reduced by the citizens who have expressed their interest in the parks development. Work crews would assist in the cleaning, planting, etc. that would be necessary. As a wilderness park it would not require the extras that go with other parks. It is recommended that it be a unlighted area.

There is an architecture professor who wants to have his classes assist in the development, giving the students experience and a chance to do community service. It is possible to find other

means of assistance from groups such as interested citizens, scouts, etc. Others who are interested and who do not live in the area per se, are teachers from Kindergarten up who would like a place where they could walk with their children, enjoy and experience study of nature. The Junior Museum is interested and their members come from all over Bryan and College Station. It is a place where residents from local nursing homes could be brought to enjoy some out of doors and the natural beauty that the area offers—trees, grapevines, flowers, etc. It is readily accessible to citizens from other parts of town.

It is the desire of this group of interested citizens to let the Parks and Recreation Committee, City Council and others who are interested know how they feel about the purchase of the property south of Haines for a park.

1. The believe that their vote mandated the purchase. The votes came from the entire city.
2. They believe that it is the best site for the best park because of the natural habitat.
3. They believe the density of population is such that the acquisition of the park is most urgent.
4. Although this group is assumed by some to be just the residents whose property adjoins the site, they want to point out only a dozen or so families have property adjoining the Holik property. And further, the 300 plus and the 221 signatures on petitions are from registered voters all over the city, and that most live farther away from the site, so their mandate is not one of emotion but for preservation of an area and the development of a park for all the citizens of College Station.

   Furthermore, these citizens are sincere in their desires for all of the College Station parks to be developed with a plan and wish to be of some assistance for this purpose. Perhaps this group can be the forerunner of an organization which might be called "Friends of the Parks" and would be able to assist in College Station acquiring and developing a park system that would be the envy of any city around. We recommend that the city purchase the acreage south of Haines for the park which the area needs desperately.

The preceeding minutes came from a public hearing held to promote the proposed developments of a city park. Nimbyocrats were persuaded to give up their backyards and take an interest in community-wide affairs.

EMPLOYEE ORIENTATION AND TRAINING

Rick Holland
Dewey L. Shroyer
Donna Pond-Watson

This session will provide information for new employee orientation as well as continued on-the-job training for Park and Recreation employees.

Dewey Shroyer presented a slide show used by his department to introduce new employees to their job and working area. Mr. Shroyer talked about the procedures the Grounds Maintenance Department went through to develop the show and what should be included. Seven points considered most important were:

1. An introduction to various individuals with whom the new employee should become acquainted and the role each of the individuals play in the overall operations of the department.
2. An explanation of the different job classifications within the department and the duties performed by each.
3. The need for a continued awareness of safety precautions and regulations and the importance of reporting safety hazards and injuries immediately.
4. University and department rules relating to driving, parking, dress codes, sick and vacation leave, etc.
5. General information relating to attitudes, performance evaluations, opportunity for advancement, raises, etc.
6. Work hours, break times, emergency situations, overtime, etc.
7. Filling out time sheets, work sheets, distribution of pay checks.

In addition to the presentation, the department has prepared a packet of material for each employee to complement the program. The packet contains a Traffic and Parking Regulations brochure, a map of the campus indicating the locations of the Grounds Maintenance Office and Shop as well as the University Personnel Department, copies of time and work sheets for review, and a card with the Director's name and department telephone number in case of questions or emergencies.

Benefits of such an orientation program have been threefold:

1. The superintendents and foremen have been freed of lengthy one-on-one orientation sessions and can devote this time to other activities.
2. The department is assured that each new employee receives an identical and complete overview of department operations and regulations.
3. An unexpected benefit occurred as the department sought to comply with the absenteeism monitoring program initiated by the University Personnel Department. No Grounds Maintenance employee can say that he did not know to call to report his absence or that he did not know the number to call as these two items are stressed in the presentation.

Donna Pond-Watson talked on the importance of techniques and methods used when training.

> If you are planning to develop or revise your training program, look closely at who you want to train and what you want to train them to do. Many times you can invite their ideas and tailor some sessions to their needs and interests as well as to the organization's needs. Consider what your employees know and provide new information. Make training short and to the point rather than long and redundant. Consider the job and work environment and don't ask employees who are typically mobile or particularly busy to sit still for long or tolerate a long drawn out presentation which can be condensed to an hour or two. As much will be remembered by the information organization and presentation as will be learned from the contents. Select the best time, place, and length of training. Provide materials or equipment that may be needed and a qualified instructor or leader.
>
> The training site should be easily accessible to the employees and held during work hours with job release time to attend.
>
> The training site should be well planned out with an agenda and statement of purpose. Handouts are of value if it is a lecture program because it has been proven that we only hear 50% of what is said and forget half of that in 24 hours.
>
> Provide ample time for questions and feedback and in a controlled fashion and allow participants to provide examples or explanations which will supplement the training information.
>
> Adequate rest and break periods will encourage participant exchanges and information sharing and will often reinforce the training information.

RISK MANAGEMENT AND SAFETY

Kit Barkan
Bill Runnoe
Kris Marek
Terry Kidder

Risk management and safety is a subject that all administrators and operators are concerned with because of liabilities and law suits. Kris Marek, of Oklahoma City, OK, had done a great deal of research for this topic in order to relate the most important aspects of risk management.

Negligence is the number one risk that operators face in the area of parks and recreation. There are basically four areas of negligence that management should be aware of. First of all is the existence of a legal duty to the public. This simply involves protecting visitors, guests, or participants from physical harm. This is done through basic precautions such as regular maintenance like replacing broken boards and filling trenches. The second area is the breach of duty which covers the failure to protect the public. This is somewhat related to the legal duty but is on the other end of the scale. Legal duty is an obligation to participants and the breach of duty is the failure to be aware of these obligations. The third area of negligence concerns damage. This includes the actual loss of personal property due to a lack of concern from the operators of a specific function. This may include a lack of signs providing caution to the participants or simply a dangerous layout of a particular design. The last area of negligence involves a proximate cause. This is the connection between the failure to protect the participants and the damage incurred by the participants.

After learning different areas in which you, the management, can be attached by the public it was necessary to know what tools are available for your defense.

RISK MANAGEMENT TOOLS

1. Tort Claim Legislation

   This legislation deals with setting aside sovereig immunity not using the governmental protection available but depending on the citizens of the community to help back to you.

2. Insurance

   There are several types of insurance and insurance is good, but a rather naive approach to safety from suits and other liabilities. A common type of insurance is

legal liability insurance which will provide you with any lawyer you want to defend you against a law suit.

3. Liability Waivers

   Basically these only help when the responsible party is proven not to be negligent. Liability waivers will cover you when you are innocent and there is really no need for coverage.

4. Situation Avoidance/Prevention

   This is perhaps the most ideal way to be covered in the area of negligence. Avoid the accidents so there is no suit. Prevention is said to be the best medicine. This is definitely the most useful tool which is carried out with regular inspections and general awareness and concern.

In a summary of claims there were filed in 1983 it was evident that swimming pools were the number one area of concern. Fourteen percent of all claims filed were associated with swimming pools. People sue for negligence of the lifesavers, or the chemicals in the water or various other reasons. Twelve percent of the claims filed had to do with the playgrounds. After looking into these situations it was found mostly that the equipment was damaged in some way or was just not fit for use. These are both areas in which prevention and avoidance would have paid off. If someone cared enough to report a loose screw on a slide in a playground, or a wire sticking out from a fence around a pool, specific accidents would never happen.

Bill Runnoe from Oklahoma City, OK stressed the importance of making sure participants knew where they were going. Recreation and park areas should be particularly aware of low electric lines, branches over the roads, and low clearance areas for the reason of tourists and guests pulling boats for their vacations or driving motor homes. These types of things are never thought of until there are reports of people running their vehicles into them.

Any possible initiation of injuries should be avoided. Often, while construction may be underway, numerous hazards are waiting to happen. When you have construction going on, be sure to instruct the crew to protect, shut down, and lock up any hazardous equipment. Trenches or gulleys should be fenced or well marked in case of people driving at night into the area. The crew must assume that no one is aware that the area is under construction.

Another point stressed by Runnoe was to keep staff qualified with valid and current certificates in their field. Many stories can be told about lifeguards that could have been heavily sued if their certificates were not valid. Rangers who carry guns must undergo proper training and proper refresher courses. They must be qualified to insure substantial safety.

Posted signs with rules and regulations are important to any form of unsupervised recreation. Signs regarding directions to different locations is helpful to cut down on confusion.

When accidents do happen there are three important factors the employees need to be aware of. One, report the accident to an authority as soon as possible. This person in authority may know something that can help the situation. Second, try to have a witness. If anyone was near, hold on to them in case you need a reference. Thirdly, it is important to fill out an official incident report. These reports should be filled out with specifics and as accurately as possible.

The third panelist to speak was Terry Kidder of Tulsa, OK. Kidder spoke mainly about the employee and employee injury.

When an employee is injured and cannot work for a period of time, the Tulsa Department offers a choice of types of pay. This department has an "injury leave benefit" which provides the employee with regular salary while recovering from the injury much as sich leave does for many companies. The employee of course has the choice of workman's compensation which is usually less money, but it is an income during this period. The Tulsa Department of Park and Recreation is set up with a supervisory personnel board who is responsible for being aware of situations to let this board know if things need to be done whether it is maintenance or whatever. Again, prevention of accidents was mentioned. Medical examinations are given to employees regularly. Protective equipment is required while on the job. "Bump hats" which are somewhat like the batting cap in baseball is to be worn at all times unless the workers are in an area for "hard hats." This one simple measure has cut down on several head injuries annually. Rain gear is furnished when needed. Respirators and filters are available and cuts down on breathing disorders and sore throats. Eye protectors are required for certain jobs where foreign matter is likely to get in their eyes. They have also started a Gatorade program which has eliminated all heat stress needs in the past two years. Many of these things seem small and perhaps insignificant until you try them or do without them. These are all preventive measures which not only

cut down on discomfort and injuries for the employee but they make the employee aware that the employer cares for their well-being.

Prevention and avoidance contribute to the safety awareness of the employees which cuts down on the risk that management must deal with.

SELF COMPOSTING TOILET UNITS IN BACK COUNTRY INSTALLATIONS AS USED BY TEXAS PARK AND WILDLIFE DEPARTMENTS

Robert Rayburn

The first step in deciding what type of toilet you need is planning. How do you want to dispose of your waste? If there isn't any water available, then you have to decompose it.

One way is by leaching it into the ground. This may not be permitted if this unit is near a ciy or a county main water supply. This could contaminate the water supply. This process allows the waste to penetrate the soil. To use this process there must be at least twelve inches of well drained moderately sloping soil. Also, it must be at least one hundred feet from any surface water.

One problem we are faced with is what sort of intrusion do we want to provide on our landscape? In this rustic environment, there isn't any need for a big building with pink walls. This stands out from the landscape. We want to keep these inconspicuous as possible. But, on the other hand we want to eliminate as much maintenance as possible in these remote areas. In these remote areas, your visitor levels are going to be low compared to the ones by park headquarters and the parking lot.

There are many different kinds of waste disposal methods. Discharging waste water by discharing waste water systems. These are waste water systems that contain waste water within itself. This is an anaerobic process. This process is micororganisms that break down the waste. This is a very slow process, and has a very bad odor. Also it creates the problem of leaching into the soil and may cause some sort of pollution.

One way of composting your waste is by Human Toilet. Basically these are designed like a septic tank system, except they are introducing more oxygen into your process. This allows the treatment to be speeded up by six times as much.

A pit toilet or outhouse is a widely used technique. It consists of an unsealed hole at least three to six feet deep. Do not place these units in flood planes for obvious reasons. It must be at least two feet from your highest ground water. You need your runoff directed away from your unit. The entry hole should have a self closing lid. This will prevent flies and animals from getting into the waste. If this unit is built and operated

correctly it will last about twenty years, depending on the amount of use. The cost is about $300 to $500. They are comparatively inexpensive.

Chemical toilets are units where the waste is treated with chemicals. There is no odor, and you cannot see the waste. The disadvantages are the on site disposal problem. It cannot be taken to waste processing plant, because the chemicals will disrupt the process at the plant.

A composting toilet works on an aerobic process. The general ingredients are bacteria, fungi, microorganisms, and contains carbon and protein. Ninety-five percent of water waste material escapes in the form of gas, or water vapor.

The basic requirements are, it must have adequate moisture. If it gets dry, it will go dormant. If it ever goes dormant, as soon as it rains or receives any other type of moisture it will become active again. It must have plenty of oxygen. The tolerable PH range is from 4.5 to 6.2. The temperature is generally 45 degrees, must have balanced nutrients, especially carbon and nitrogen. It gets nitrogen from waste but normally not carbon. Generally this has to be added.

A badge composting unit is when the waste is transferred from the outhouse to a bin. A bin made of either tin or fiberglass. The waste is transferred by hand. Which means this is going to take a lot of maintenance. The process takes about two weeks if done properly. It must be mixed with humus material, and shreaded bark. When the waste is broken down, it can be spread on the forest floor in the form of duff without pollution the water supply. It is designed to treat small volumes of waste.

A Clivus Multrum is a continuous composting non-discharging unit. It requires two to three years to compost. When finished it can be put in your garde, it is that clean. It has less maintenance. To begin this process you must build a starter bed. This consists of peat moss, shreaded hardwood bark, and coarse duff or soil, and seasoned manure.

While using this unit you may have a shock use. This is when a lot of people are using the unit. When this happens you will need to add some shreaded bark.

The temperature rarely exceeds 125 degrees. These units are equipped with fire extinguishers in the event they are needed.

This unit is entirely odor free. The cost is from six thousand dollars to ten thousand dollars which may seem to be expensive, the low cost of maintenance will make them more economical.

URBAN RIVERS

Jackie Bubenik
Dan Kamp
Max Robertson

This session dealt with three aspects of developing urban water resources; recreational benefits, economic benefits, and federal and local agencies. Max Robertson began the session with a slide presentation showing many examples of how cities such as Waco, Austin, Tulsa and Lubbock are using their water resources to create a vast range of fine recreational facilities. These examples included raft races, fountains, water amphitheatres, car shows, etc. Two basic concepts were emphasized. The first concept stated that although many activities such as auto shows and jogging do not actually require water, its presence greatly enhances the activities. Secondly, most of our cities' most promising assets are not always immediately recognizable. With creative planning, even urban liabilities can be turned into assets. Mr. Robertson stressed that our biggest obstruction to creating fine waterbased urban recreational facilities is our own imagination.

Dan Kamp discussed the economic opportunities of Lubbock's Canyon Lakes PROJECT. The purpose of this project is to create a fine recreational facility for the people of the South Plains, while also creating economic opportunities for the City of Lubbock. To stimulate private commercial development, Lubbock is developing a water corridor to link the Canyon Lakes to the city's civic center, which lies in the central business district. This corridor will consist of a navigable waterway approximately 3/4 mile long. The city will first purchase the land necessary to construct the corridor. After construction, the city will lease or sell (with deed restrictions) the remaining land back to the private sector for commercial use. The initial construction cost will be approximately fifteen million dollars, but economists believe that when this corridor is completed, it will generate roughly four hundred million dollars in new commercial development, thereby offsetting the cost of construction. It is also believed that when the entire Canyon Lakes Project is completed, it will generate 3/4 billion dollars for the City of Lubbock. Kamp sees a lot of potential in Lubbock's water resources and believes that the key to realizing this potential lies in private involvement.

The final speaker was the session's chairman, Jackie Bubenik. He discussed some of the various federal and local agencies that must be dealth with before and during the development of an urban waterway.

When developing a waterway, the first agency to contact is the Army Corps of Engineers, which has ultimate jurisdiction over all navigable waterways. The State Water Resources Board has a great deal of regulatory power also over the use of public water resources. The local Health Department plays a vital role, expecially when developing an urban waterway that has been polluted by storm and sanitary sewers. The city and county engineers have an important function as they are required by the Army Corps of Engineers to see that no proposed development causes a rise in the one hundred year floodplain. Any animal species that might be adversely affected by development can be identified by contacting the State Fish and Wildlife Agency. Although not a regulatory agency, the local council of governments can be very helpful in obtaining permits and coordinating the efforts of the other agencies.

To conclude, Mr. Bubenik pointed out that although all of these agencies can be very helpful, they can also bring forth problems that can slow down a project. He feels that the way to avoid these problems is to form an ad hoc committee composed of representatives from all of the appropriate agencies. If this is done early in the planning process, many problems can be avoided.

SUPERINTENDENT'S CORNER

Robert Tickner

This question and answer workshop touched on many subjects ranging from ball diamonds to synthetic courts. Many suggestions were offered as solutions to each discussion topic.

Ball diamonds were the first topic and suggestions were plentiful from how to maintain the infield arc to getting an early start on maintenance the night before to lessen the risks of rainouts. The use of a maintenance agreement with those who regularly use the fields can reduce overtime and preparation time. If these groups were made aware of how much easier it is to work a field that they had raked the previous night and then your people added the "finishing touches" a good working relationship and better playing field might result. This might also lessen the chance of rainouts as the park crew could spend time drying wet areas and additional time on the other maintenance items such as restrooms. Clay is becoming expensive in the DFW area due to transportation costs and distance. As an alternative if grass is used from the start you'll have less problems. The high cost of converting to grass may result in poor playing conditions for a limited time during conversion due to installation of an irrigation system. This can reduce maintenance because less time is required to prepare the field, reduction in manhours due to automation of watering and less clay area to maintain.

Proper design of the field can also reduce the frequency of rainouts. If for example you're building a complex, 4 fields at 90° angles to each other, start by centering your concession area 2 feet above the field area. By designing a slope into the entire complex area you can work the water off and away from infields. Most engineers recommend .35% slope but this does not always work so it was recommended that a slope of .75% be used. This slope is rarely visible and provides a much better playing surface.

Putting the lines on your playing fields was our next topic. Many departments use the Line King machine and repeat this process several times a year. In an effort to reduce the number of times this is repeated the application of a herbicide after cutting and the first new growth occurs in the line. The herbicide, Embark, is applied on each side of the line to make the line more visible. This process has reduced one department's frequency from several times a year to 3 times a year in cutting their playing field lines.

Tennis court maintenance, specifically concrete, was the next topic. The surface cracking or spalding forcing major repair or costly renovation could be reduced by jitterbugging when built. Addition of post tension will also help. When this cracking occurs an asphalt overlay will hide them but not solve the problem.

Solutions for the holes around the bases after a game involved having the proper mix in the field. The mix, clay and soil, determines the effect water will have on your field. If water is found to be in excess, puddles, an improper mix has been formed and additional clay and soil will help if added at the right proportion. The installation of an irrigation system system on clay fields has helped one department alleviate this to a certain extent. By watering after the last game of the night the field dries through the night and is easily worked the next day as any puddling is allowed to dry, eliminating a return trip to work the field when you water in the morning.

Getting the water off a wet field brought many suggestions. A product known as "Turface" was recommended. This is commonly used on golf greens for this same purpose. This product will hold its own weight in water allowing for quick dry-ups and resumption of play. Diamond Dry, a corn cob derivative, does a similar job but a drawback results in the dust formed from the breakdown of the product under compaction. A mixture of both can help with heavy water drying chores. In Kansas City, maintenance of fields occurs during the night because of the frequency of morning showers. This gives the field the chance to dry and saves time because the field was ready for play prior to the rain. Surfactant was also suggested but the high cost and lack of substantiated data on its performance may prohibit its use.

REORGANIZATION: A WILTING FLOWER CAN BLOOM

Sharon Prete
Steve Beachy
Roger Scott
Robert Tickner

Reorganization is not only occurring in the large metro areas of the United States, but is right at home in the smaller city as well. This workshop offers 3 versions on the subject, some are to increase productivity to meet a growing population while others are used as a means of facing the budget crunch within the department or the city as a whole.

Steve Beachy

College Station had never really had an effective organization until now so in essence we've never reorganized. Local government as seen through my eyes consists of your citizens, city council, city manager, the department heads and your advisory boards.

As the department head it is my responsibility to ensure that we provide two items: Facilities and programs as well as those directly related to these. We also acquire, develop, operate and maintain our system while providing the recreation program. To be effective:

Each worker has to be effective to one boss.

Each worker's authority must be directly related to their degree of responsibility.

You must tailor programs to fit the people within your department.

The four basic activities of a park and recreation department also must be considered. These include but are not limited to:

Operation of recreation facilities and programs.

Operation of special facilities (pools, gyms, golf)

Parks construction and maintenance

Administration

College Station through the years has grown from 16 full-time staff divided into 5 division: Administration, Park, Recreation, Parks Maintenance and Forestry. Here is a summary of this growth:

Fiscal Year 1979

16 full-time
6 part-time
2 additions (full-time shop foreman, part-time draftsman)

Fiscal Year 1980

Emphasis placed on maintenance as a result of bond issue in 1978, we received additional groundskeepers and forestry workers. Results were an all-out effort to maintain existing areas and bring those new areas on line from our rapid expansion with consistency.

Fiscal Year 1981

Growth in budget and upgrading two part-time positions was the main emphasis. The shift from maintenance to sports facilities (aquatics and ball diamonds) resulted in a full-time staff of 37. A capital improvement program came on line allowing for a full-time planner.

Fiscal Year 1982

Our main reorganization occurred during this year. Our maintenance division adopted a district concept. This has helped to establish direct responsibility and authority as it made one man responsible for each district and accountable to the superintendent. Result: Better communication.

Fiscal Years 1983 and 1984

Our department expands into the concessions area and growth occurring in our league programs warrants 2 additional full-time staff to oversee these functions. An additional park planner was also hired.

In summary, each budget year emphasis must be placed on one area to respond directly to growth and expansion of the city and our programs and facilities while maintaining existing areas and facilities in a manner consistent with the past. Good people lead to a good department.

Robert Tickner

Our situation differs from many because the department head and superintendent were hired within six months of each other, both from out of state and have only been there 3½ years. The facilities, personnel and programs were well established but with limited funding especially within the facilities aspect.

The main emphasis was on improvement of these existing factors and this was to be a challenge for the department's administrators.

The first step was to get more personnel into the field as the existing structure had one to one supervision which limited operations when someone didn't show. This was where our main emphasis in restructuring was placed. Our efforts in this were centered around our foreman, allowing them to grow professionally and move those around them down to provide more workers in the field. Through attrition, each foreman was assigned two lead-persons and then the full and part-time staff necessary to function. Each foreman was also assigned specific area responsibilities as well.

One other area was changed and this was public building maintenance. In previous years this was contracted but the public and elected officials felt this needed to be changed. To accommodate this we entered the building maintenance business with the classification of a Building Maintenance Technician. This person is responsible for routine, preventative and emergency maintenance on all city-owned buildings. The custodians were also brought under our agency's responsibility. They too had previously been contracted.

In summary, our park maintenance staff has shifted more from reliance on part-time to a full-time staff who knows their responsibilities and can fill in the slack when needed whereas with part-time (seasonal) they tended to leave after a short period of time and leave us out in the cold trying to fill the void in a short time to allow continuity.

On the recreation side, a more traditional approach of a center director is utilized for each facility. This however caused many problems in logistics, i.e., who minded the store while those folks taught classes and how to keep the centers functioning when these folks had other things to do. A need arose to change this and it was accomplished in this manner: 1 rec leader was pulled from each center. Each of these was given new responsibilities and renamed Program Coordinator. One now has 3 rec specialists who do external (school and private group) programming. They are also the summer playground program with interns assisting from the local universities. One is our concession operations chief as well as league and swimming pool coordinator. This was formerly our athletic supervisor. Our third program coordinator is responsible for the civic center operations among other responsibilities.

Looking further down the chart, each center director has an assistant who also has building assistants who replaced the custodial contractor as part-time staff.

By using this system we have accomplished our department's goal of expanding programs while maintaining current staff through reclassification and some shuffling on the same amount of dollars.

Roger Scott

A unique situation, occurrence has happened in Northglenn. Our department was reorganized just prior to my appointment in a district concept. This concept is very good in that it increases your effectiveness and ability to correct situations which arise during the workday. Your field results will illustrate this dramatically. Many of the changes which have taken place within our organization stem directly from political or administrative processes, decisions from within the department and outside the department.

Our district concept has two district supervisors and within each of these two districts, a general turf maintenance group. Irrigation and small engine repair groups round out each. The large vehicles (self contained) are maintained as a fleet through the Public Works garage. Our park planning function was under the Community Development (planning) Department which resulted in a good working relationship. Communication problems arose as a result of project completion and when maintenance was to begin in the city responsibilities. This resulted in a transfer from the Community Development wing all park planning to our department in 1980.

In 1981, transfers into the department included the sports facility maintenance from recreation. Transfers out included parks planning to Public Works and some right of way maintenance responsibilities. City leadership changed and as a result, park planning was returned and additional responsibilities in weed mowing were also added without additional personnel making these items for 1981.

1982 found the city going bankrupt as a result of over-extending and escalating costs on a water project. A contingency plan was drawn up eliminating all seasonal workers and many full-time positions as well as our capital expenditures; thus, fell the park planning function. Recreation lost the sports facility group and many programming opportunities. All but key essential positions were eliminated so as to maintain services with no expansion in order to bring these people back at some future time re-establishing our department.

A budget re-appropriation brought back clerical and some limited weed mowing support. Recreation gained momentum and we mobilized the sports facility group. Much to the chagrin of our department

the small engine group was transferred to the Public Works area leaving us low man on a priority list for repairs. At one point during the mowing season we had one riding mower operable.

Clerical support was again cut in 1983 within our department yet the city manager gained a position in this area. A seasonal tractor operator was allocated for weed mowing. A directive was issued from the leadership asking that positions be eliminated and reorganization drawn up for approval.

A managerial study of our department was commissioned in 1984 by the city manager and council. This study concluded:

1. That the district concept in use be scrapped as it is a duplication of effort and need.
2. Removal of the division head level within the operations group.
3. That the staff be lined out to do specific tasks, duties and functions.
4. Supervisors report directly to the director, eliminating both superintendent positions.

In summary, you need always to be flexible, do not become rigid to change for it must occur sooner or later beyond your control. You must learn to survive; when, where and how to be seen and heard as well as when to be quiet.

The district concept once established provides a more progressive form of operations and management. The employee is visibly motivated and gains pride in their accomplishments with the regular use of the park by the citizen. This motivation works outside the department in that other city employees can see an improvement in the job as a result. This concept works and should not be left in a scrapbook of organization charts but be utilized but be utilized to its full potential.

"CAMP CHICOT: A CASE STUDY OF THE DEVELOPMENT OF A RESIDENCE CAMP FOR HANDICAPPED INDIVIDUALS"

Joseph Popadic
Sadik Artunc

Abstract:

Camp Chicot is a residence camp designed specifically for Louisiana's handicapped population. This permanent facility, currently in the design stage, will provide a full range of activities in a natural setting for handicapped individuals. Issues and problems faced in the programming, planning and design of this project are discussed.

Introduction:

Camp Chicot was a public service project for the State of Louisiana, begun last year especially for Louisiana State Parks. Camp Chicot is a camp specifically designed for a handicapped population. In the last ten years we've seen tremendous movements on the part of society to limit or remove barriers from various segments of the population. One of these segements is the handicapped populations and I think all you being recreation professionals have seen how it has hit your respective agencies. Most likely you have implemented quite a few moves to improve your areas in terms of accessibility (e.g. ramps, etc.). At Louisiana State University we are having a massive ramping project now, where they are putting ramps everywhere or widening doors or a variety of other things to serve the handicapped. If you see new projects coming in you will notice toilets, sinks and park shower facilities that would enable the handicapped populations to use these.

What we were doing in Louisiana besides the general upgrading of all our facilities was discovering that we had a whole variety of special purpose camps throughout the State for specific handicapped organizations: Louisiana Association for Retarded Citizens held a camp at Lake Bisteneau State Park for four weeks a year; the Louisiana Society for Diabetes would hold a camp near Hammond for two weeks a year; the Lion's would hold a camp somewhere else for so many weeks a year. The State was giving money to each of these organizations at a sort of piecemeal effort - $20,000 here, $10,000 there, and so on. The organizations would take existing campgrounds (not necessarily the best, but what they could rent) and install modest ramps built of plywood and a few other makeshift facilities with the money they had. They were getting a very good recreational service for the handicapped population, but not the type of recreation they would like and certainly not that of which the State was capable.

The State and several of these organizations came together and took a look at what they were doing and not doing. They decided that, in fact, it might be beneficial if the State would provide a specific, permanent facility for handicapped populations, useful to a variety of these organizations. The State could then schedule the organizations on a yearly basis and therefore, have a really exemplary camp that was not only accessible, but very accessible for the entire population and would have everything that handicapped persons would need. So with this in mind, the College of Design, Department of Landscape Architecture at Louisiana State University, met with some of these societies and we decided that we would investigate this type of camp.

We ran into several problems immediately. Being landscape architects we were aware of the handicapped population—at least we thought we were. We knew we had to have ramps, because they were being built everywhere. And we knew things about sinks and doorknobs and things of this nature, so we thought we had a pretty good handle on the handicapped situation, just as most architects feel they have a handle on it. We were smart enough to know we didn't have a handle on it; however, and that we needed to go out and look for some expertise on the subject. We needed to see exactly what we were in for and what we were going to try to do. We put together a procedure to learn about this. The first thing we decided to do was to learn about the handicapped—their problems as individuals and as a population. We were not familiar at all with handicapped persons; we were just about to have the Special Olympics (which were held last summer in Baton Rouge—certainly an awakening experience for most of us, but unfortunately we had to have most of our research done before that event. It did allow us to find out a little from the people who worked in the Special Olympics, though. The second step was to determine the needs of Louisiana's handicapped population. This we did and found out the number of organizations and amount of people working to improve the handicapped populations' situation was phenominal in terms of the size and magnitude. Third, we determined to find out the current efforts nationwide, to find out what was being done in the various parts of the nation to really help the handicapped individual. We hoped we would be able to find an entire camp or park designed for handicapped individuals (remember, this was prior to our literature review or any sort of investigation - just our general thoughts at the time). We knew we needed to develop an activities program and pick a site and prepare a master plan, all within the budgetary restraints placed on us by the State. A project cost estimate was required by the State so we charged off to get all this done, at least from the academic sense.

BEST COPY AVAILABLE

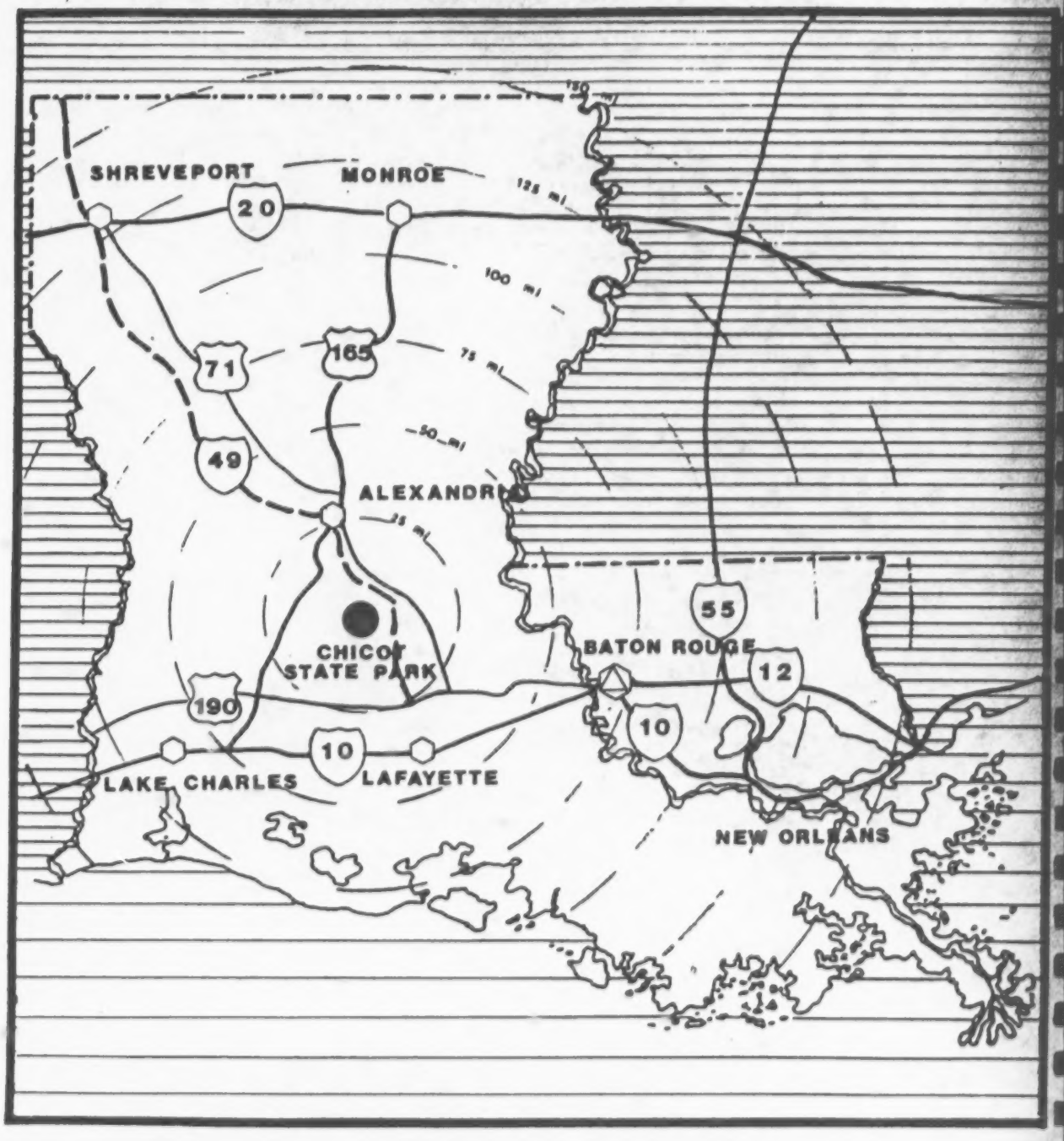
As it turned out, there were several things that helped us along: (1) the State was very, very eager to have this sort of camp, so we found all concerned very agreeable; (2) the State had set aside some land in 1970 at Lake Chicot State Park, located about in the center of our State, for use by our handicapped. No development had occurred but at least the land was there and the State indicated there would eventually be some kind of facility there for handicapped individuals. Se we had <u>that</u>, but there was no designated area for a camp in this rather large park. The amount of acreage available was vague—somewhere between twenty to one hundred out of 1600 in the park. The planning investigation was conducted last year; this year construction funding is going before the Legislature with a tremendous amount of support from citizens and government. We anticipate Camp Chicot becoming a reality within three to five years.

Louisiana is a very wet state, with many lakes and abundant wildlife resources. We have been called the "Sportsman's Paradise," sportsment referring primarily to hunter and fisherman in terms of paradise. But we really are - we have tremendous natural resources luring people to get out and explore the outdoors. However, our resources aren't always what you would think perfect for the handicapped individual so we had to figure out how to approach this predicament. Lake Chicot State Park is a man-made lake in a very beautiful, wild kind of setting. The Park is filled with Cypress trees and is situated in a hilly section of the State. Within this hilly park a wide variety of topography is found. Large sections of the lake/park offer the opportunity to take a small boat and drift through a veritable wilderness. One can boat ride through the trees, the relative clear water being four to five feet deep. (See Figure 1)

Research:

Lake Chicot State Park offers plenty of fishing, nature observing and hiking opportunities and many, many other pleasant ways to just tour the wilderness. Always central on our minds was the idea of a camp for handicapped persons as opposed to one for people with no such limitations. If we were talking about a camp that we would build for just anybody, we assumed handicapped persons would not be able to do everything but we knew they would want to <u>experience</u> everything. Our major thought, therefore, was to give the handicapped the experiences they are capable of enjoying; as a matter of fact, let's go out of our way to make sure they experience everything that they possibly can. We went on a scouting trip to Lake Chicot State Park where we hiked a good bit of the area. We found hiking opportunities galore. We observed paths, boating opportunities, an abundance of wildlife and very delightful vegetation.

BEST COPY AVAILABLE



CHICOT STATE PARK

CAMP FOR EXCEPTIONAL CITIZENS

PREPARED FOR:
FACILITY PLANNING & CONTROL
DIVISION OF ADMINISTRATION
STATE OF LOUISIANA

BY:
RESEARCH SERVICE UNIT
COLLEGE OF DESIGN
LOUISIANA STATE UNIVERSITY

NORTH

SCALE

LOCATION MAP

LEGEND:
- LAKE CHICOT
- STATE CAPITOL
- MAJOR CITIES
- INTERSTATE HIGHWAY
- MAIN HIGHWAY

Looking at a map of Louisiana (Figure 1) we see that Chicot happens to be almost centrally located in the State. In terms of a park for the handicapped, even though we don't know why Chicot was originally chosen for the purpose, it is an ideal situation geographically. People from New Orleans, Baton Rouge, Lafayette, Lake Charles, and all the way up to Shreveport and Monroe could come to Lake Chicot State Park on a yearly basis without much difficulty. We were pleased right off that we had it at Chicot State Park. Knowing that we were going to build at Chicot - knowing basically we were going to try to do as much as possible to enhance the recreational opportunities, and try to keep it as much a park that anybody would enjoy - we charged off around the countryside to find out how we might go about doing this. We quickly found out about several camps in the U. S. doing just what we were trying to do. Instead of re-inventing the wheel, we decided to visit those parks in proximity to Louisiana and our budgetary constraints.

Our first stop was Camp Will-Away Recreation Area, Yargo State Park, Georgia. Will-Away has a concept very similar to that of Chicot: (1) it is specifically for the handicapped population; it is not for everybody's use. We found out early in the game that the special things we are going to do just cannot take the wear and tear of the normal user and retain their true purpose to deal with the handicapped. There is a catch at Will-Away, however. Will-Away is open to handicapped people AND their families and friends. The handicapped person has the option of taking (rather than being taken or sent) family and friends and renting a cabin, using the boating facilities and experiencing other activities - <u>with the family</u>. Sharing experiences with family and friends is a very important concept. (2) Will-Away was excellently designed with rustic architecture, situated in pine woods and centered around a lake facility. The lake facility had plenty of opportunities for swimming - they actually had special ramps where people on wheelchairs could wheel into the water and handrails in the water allowed swimming to a degree. Boating activities were also available to handicapped persons. Special pontoon boats, holding four wheelchair people and a counselor and powered by a small 12-volt electric motor - a tremendous resource for people who otherwise have to forego an activity common to "normal" people. Another unique (perhaps common sense) feature of the boats was the use of a shade awning. Some people were on certain medications and could not stay out in the sun long without getting very sick. So, in such a camp shade is a critical consideration. A very large wooden bridge at the facility was used for local access and as a fishing pier.

As part of the handicapped population of Will-Away, we found out that geriatric people from the area nursing homes visited the facility during the off-season. These people gravitated

around fishing activities and enjoyed themselves immensely. Severely handicapped individuals were at the facility during our visit and we got the opportunity to observe their reactions to the boating experience. While they did not get to boat around the lake (restricted to circular routes one hundred feet from the shore), the kids enjoyed it beyond words - they had never had such an opportunity to go on boats - and were getting a tremendous thrill.

Will-Away's swimming pool had some very interesting features: (1) around the pool was a textural surface, beginning four feet from and sloping up 3-4% to the edge. Blind persons, or those with impaired vision could sense coming up to the edge of the pool because of the very definite ground differentation; (2) for paraplegics or wheelchair-bound persons there was adequate ramping into the pool. As a whole, the pool was small but very well done.

Cabins were available for the individual and family. Everything was accessible by wheelchair; the buildings could actually raise and lower on pegs. Very early on we realized that bathing or shower facilities would be a problem so we looked at Will-Away's solution(s) carefully.

Camp ASCCA (Alabama Society for Crippled Children and Adults), and Easter Seal facility in Alabama was another important establishment we visited. Here we got a real good understanding of how an Easter Seal camp works: the positive relationship between counselor and handicapped, and available activities and structures. It was a tremendous camp. It was well built but not as architecturally rustic or as well designed as Will-Away. However, the staff more than made up for any inadequacies and a lot of the buildings were more functional as to what they could do. Recreational opportunities were quite varied and exciting; they included archery and BB gun ranges and paraplegic white-water canoeing). We learned that in these activities it wasn't always the perfection that was important but the trying of and doing things they enjoyed it to no end. And that is what we discovered about Camp ASCCA - EVERYBODY enjoyed it. In another situation some people who were blind and some who could not use their legs teamed up to where the blind person relied on the person who couldn't walk, who in turn relied back upon the blind person to push them. As a result some very good situations and friendships occurred. The camp attendees got into the outdoors, got around, used all the facilities and basically were having a very good time.

We learned much about interiors here as these (living quarters) were very well though out. Building form was octagonal and had a central core of semi-private bunks, plenty of storage and liveable. The attendee to counselor ratio ranged from 1:1 to 1:3 so an able-bodied person was always on hand. Again we looked closely at the showers for solutions to our own design.

While this field investigation was going on, our team of six maintained regular contact with our Louisiana people as to what were the most urgent facility problems. We kept getting "cleaning, showers, living conditions" and we very carefully looked at these items. The notable aspect was not only the facilities but the individual care and the importance of management in the entire scheme.

At Tallahassee, Florida we visited the U. S. Forest Service Trout Pond Recreation Area. Trout Pond is a delightful, natural day-use area with yet another very dedicated staff. The important aspect of Trout Pond was the trail and pathway system with special care for the visually impaired. There were several important features in the system: (1) we had always read of the importance of tactile surfaces for the visually impaired but at this camp trail signs had large white print against brown backgrounds. The assumption was that a person would always have somebody to help them since you have to drive there and it is a day-use facility. Braille is used on the side edges of the signs. (2) Large, raised vinyl panels (similar to highway or crosswalk panels) were located on the asphalted trail in certain arrangements so that visually impaired (not blind) persons could tell what was going on, direction of main path, etc. (3) Additionally, a white stripe was painted down the center of the trails because in many situations, visually impaired persons would not be able to tell the difference between the edge of the pavement and the ground. They could, however, follow the white line because the difference between white and black is so great.

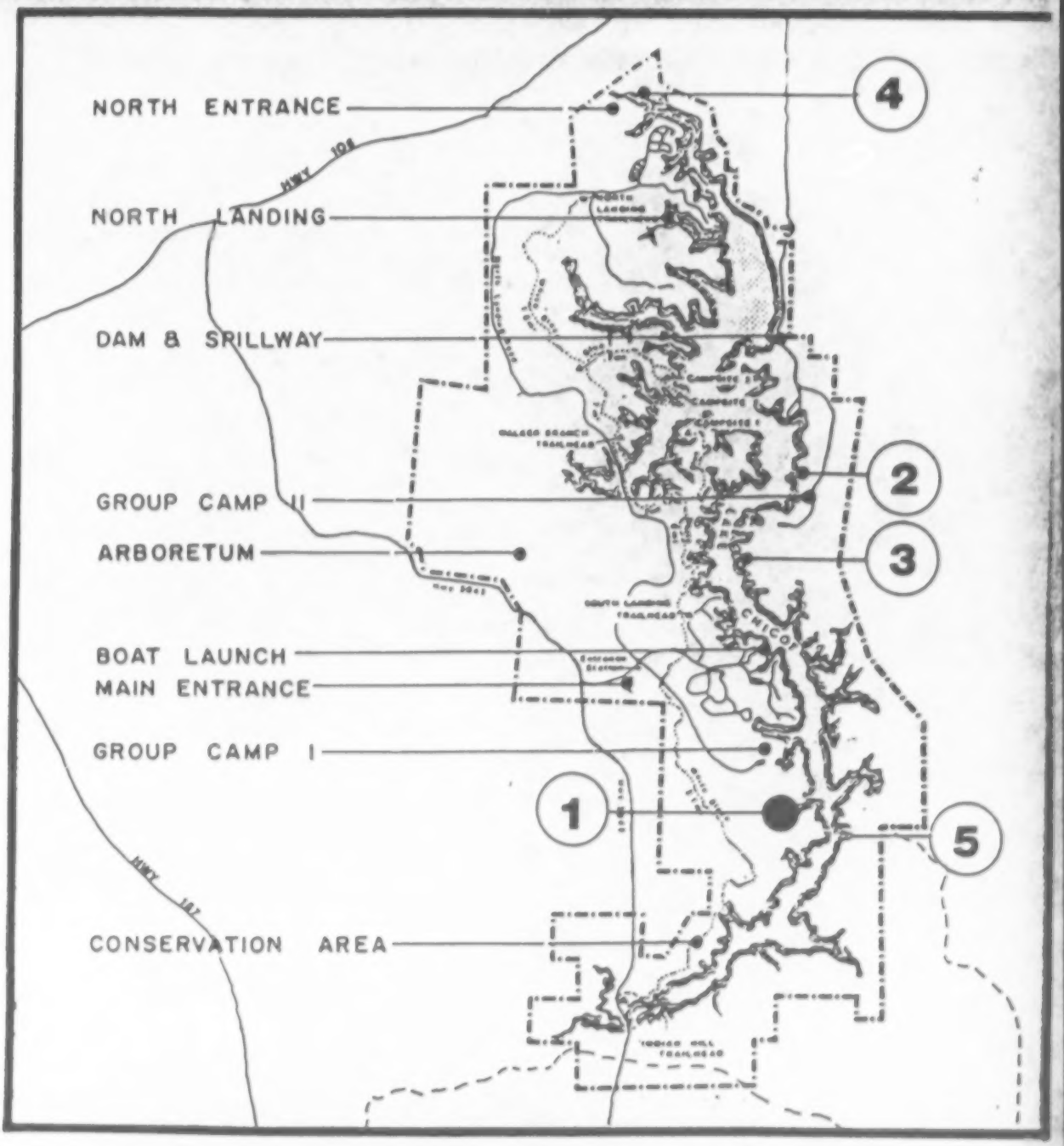
The Camp ASCCA pool was very special and although similar to the Will-Away pool with its ramps, it was quite different in other ways. It was only four feet deep, it had wide ramps to get in and seating arrangements around the edge, in the water. Around the edge a bumper rail functioned to keep persons from falling in and could also be used as a continuous handrail. The shape of the pool was triangular and a large triangular awning could be hoisted with the use of a pole and one apex and tie-downs at the others. Again, persons on medication and sensitive to sunlight had protection from the sun.

In Louisiana we visited the Louisiana Training Institute for the Emotionally Disturbed. A primary feature of the facility was a Ropes Course, designed to get emotionally disturbed persons to rely on others for support. A Ropes Course is an obstacle course that is basically a take-off from the Marine Corps-type obstacle course. It is a little safer than the military version but is designed to give people confidence by working at heights. There are three different levels: a low, middle and high course. The Low Ropes consists of natural and man-made obstacles such as wooden wall to climb over, a balancing log over a sand box or pit, and so on. If an individual falls off or keeps falling off, there is always someone there to hold a hand in support. On the higher levels (higher above the ground) problems sometimes require two or three peers and a standby counselor to solve them. It helps people learn to cooperate and communicate.

Now, you may say that first we are talking about wheelchaired persons and now we are talking about an obstacle course...? Many of the problems or obstacles were specifically fitted, perhaps harnesses here, belays there or combinations of these assists. A handicapped person can therefore work with the obstacles and gain some confidence. You would be absolutely surprised at the amount of things the attendees actually do. The Medium Ropes Course is about ten feet off the ground, so things start getting a little scary. It is here that harness and belay together are used. Obviously specially trained personnel are required to operate this course. It seems dangerous but experience and research has shown that it is one of the safer activities because of a heavy counselor:student ratio and there is no history of problems or accidents. Think this is scary? Try the High Ropes Course at thirty feet above the ground - in the trees - Burma Bridges and all.... It is absolutely amazing - they had kids up there accomplishing these problems! Again, they are in harnesses and belayed by the specially trained counselors. If they fall, they are safe. It is difficult to get most "normal" people to agree on letting handicapped people on such a course, but still it is very valuable in many situations. The Institute made amazing progress building the confidence of its students who went through this particular ropes course.

Camp Chicot:

We went to Lake Chicot State Park, took a good hard look at it and began designing. The lake is rather large - six miles in length. There were many available sites but we could not select any existing use areas. Fortunately, Chicot wasn't that well developed so there were plenty of opportunities for a good site. Together with State Parks we picked five suitable areas and travelled these areas by foot and boat. We finally selected a particular area because of the qualities of the area and because it was close to the park entrance (mainstreaming potential). (See Figure 2)



CHICOT STATE PARK
CAMP FOR EXCEPTIONAL CITIZENS

PREPARED FOR:
FACILITY PLANNING & CONTROL
DIVISION OF ADMINISTRATION
STATE OF LOUISIANA

BY:
RESEARCH SERVICE UNIT
COLLEGE OF DESIGN
LOUISIANA STATE UNIVERSITY

NORTH

SCALE

SITE SELECTION MAP

LEGEND:
- PROPOSED SITE
- ALTERNATE SITES
- ROADS
- TRAILS
- FORREST & FARMLAND

Figure 2

BEST COPY AVAILABLE

We saw water as the central resource for our particular park. The cove we were going to use was somewhat secluded because the entrance, although quite large, was actually covered with some cypress trees. While you could see out into the main lake, many non-handicapped users could not see this particular cove from the outside on the water unless they knew it was there. We found a topography ranging from bottomlands of cypress and tupelo to uplands and ridges of oaks and hickory. Our site analysis shows the cove to be in a horseshoe-shape with the water amounting to about fifteen acres. The camp itself will cover about 250 acres. The ridge top will be for buildings and activities, the area near the water for exciting nature and aquatic experiences and the water as an actual use area. We also found areas that could be used for outpost camping. You may say, "now wait a minute - you're talking about handicapped populations...". Yes we do - some of our organizations have Boy Scout troops and its absolutely amazing what these guys (and gals) can do; some of them are pretty rugged. We had to deal with <u>that</u> sort of handicapped population as well as the hemophiliacs who, although they have problems with bleeding when they get hurt, are essentially normal in every other circumstance. In fact, we found out they have little difficulty when out dealing with the activity; problems occur when they are back around the camp.

The lake was the main priority, though. We actually dared say handicapped individuals should have access to the lake - this was almost heresy. We had to convince a number of persons because as everbody knows, if you have a handicapped population, they can't <u>possibly</u> go near a lake as they will all fall in the water and drown. And they <u>must</u> have flat ground because they can't possibly wheel their wheelchairs up or down, and as a matter of fact it is best not to do <u>too</u> many things with them because they will just get hurt. Well we found out in Will-Away and ASCCA and Trout Pond that was not the case - that the handicapped individual, regardless of his/her handicap, wanted to get out and would go to great extremes to actually participate. This was true especially when he or she was encouraged, had good counselling, and had facilities that, let's say, bridged the gap of some of the things they could not do. Water is exactly what we <u>would</u> do, it is absolutely what we would do if we were dealing with a Boy Scout camp or "the normal individual" with no handicap.

We went right ahead and said we must have a lake and after about three months of deliberation, all agreed. Indeed, it was sensible to have a lake because everybody would want to get down to boat and fish and partake of all the opportunities.

We designed the camp on a hierarchal basis: the severely handicapped individual would gain as much experience as possible within a very limited range - maybe a 300-yard range in terms of total travel. An individual who had more capabilities, say a wheel-

chair - a very enthusiastic person in a wheelchair (we have people running marathon races and playing basketball in wheelchairs), could go backpacking. There is no reason that person couldn't get out there, as long as there was a path with enough space for the wheels and traction. The backpacking opportunities would be located at the extremes of the camp - as much as one half mile away. We also conceived a nature observatory and a whole range of interpretive exhibits and also open play space. We have tried to put these as much as possible into the natural topography; we took advantage of all the natural features there.

The following summaries define the proposed layout and activities program for Camp Chicot:

Land Use Plan:

The main core of structures (Figure 3) is located west of the cove on gently sloping or nearly flat land. Camper cabins are nestled on moderate slopes between the core and the cove so as to have views of both. The open play area is located on flat land away from the camper cabins, but close to the staff cabins to allow supervision. Nature and adventure areas flank the cove and serve to buffer the camp core from the main lake. Waterfront activities surround the cove and are contained within the enveloping zones of nature and hiking areas. The central placement of the waterfront activity zone lends emphasis to the vision of aquatics and the land/water edge as the focus of the camp. Access to the camp is provided from the park road which also serves Group Camp One. The Camp Chicot access road is guarded at its beginning by residences of permanent staff members. Automobiles will be kept out of high activity zones by this access scheme - a highly desired separation of vehicles and campers.

Core Area: The camp core contains the largest and most intensively used structures, such as the dining hall, pavilion and amphitheatre. The dining hall and pavilion are located at opposite ends of the core area with smaller structures such as infirmary, administration and arts and crafts. Vehicular access is to the camp core area alone, and only from the West slope of the ridge upon which the camp core is placed (the cove and activity areas are on the east slope).

Outdoor Space/Cabin Groupings:

The cabins and their immediate surroundings will be the campers' home away from home. (See Figure 4) Although day during the camp session will be filled with activities, there will be numerous times during the day when the camper will return to the cabin for rest or preparation for further activity. During these periods, quiet, pleasant outdoor spaces will provide a valuable adjunct to the camp's activity spaces. An outdoor deck area may provide

BEST COPY AVAILABLE

CHICOT STATE PARK
CAMP FOR EXCEPTIONAL CITIZENS

PREPARED FOR:
FACILITY PLANNING AND CONTROL
DIVISION OF ADMINISTRATION
STATE OF LOUISIANA

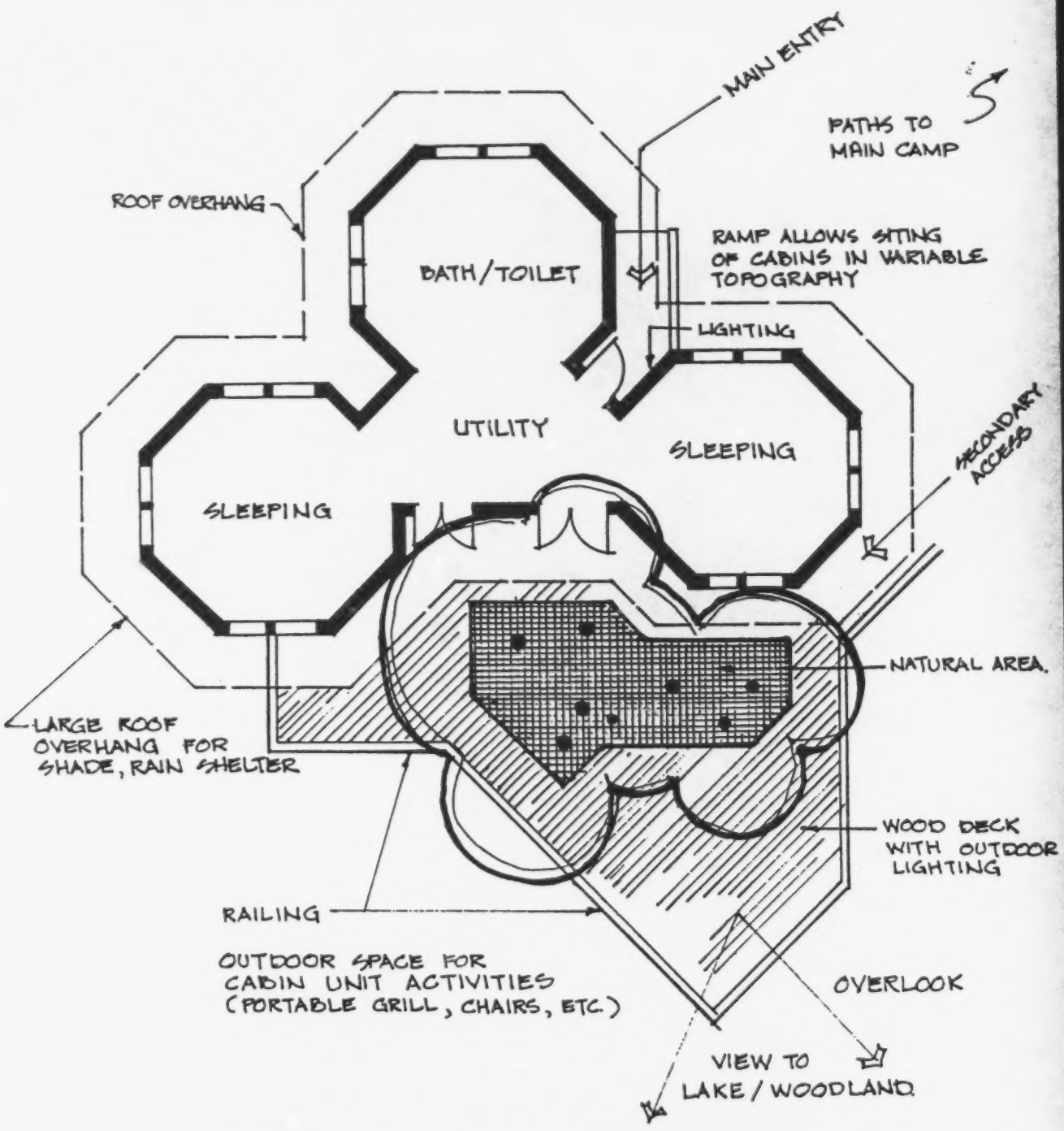
BY:
RESEARCH SERVICE UNIT
COLLEGE OF DESIGN
LOUISIANA STATE UNIVERSITY

SCALE

MASTER PLAN
for
CAMP CHICOT
A Residential Camp

A UNIT OF THE OFFICE OF STATE PARKS
DEPARTMENT OF CULTURE, RECREATION, AND TOURISM
STATE OF LOUISIANA

Figure 3



CABIN GROUP/ OUTDOOR SPACE

CAPACITY: 32 PERSONS

Figure 4

a small gathering area for some of the day's activities such as barbeques, social gatherings or learning sessions.

A group campfire ring will be located between two cabin groupings and serve as a larger group activity area in much the same way as the deck served the individual cabin.

Two cabin groups - one for male and one for female campers - are placed to have: (1) easy access to the camp core structures, (2) isolation from vehicle traffic, and (3) views of the cove and lake beyond. Although the cabins are in close proximity to the cove, unsupervised camper access to the water is made difficult by two factors: (1) the steep slopes between the cabins and water will have dense underbrush and be difficult to negotiate - especially for many with physical impairments, (2) there will be no direct connection to the water via paths. Access paths for the cabins will originate at the camp core only. (See Figure 4)

Adventure Area:

The adventure area is central to the adventure education programming of the camp. Adventure education training is an activity that allows the participant to meet the challenges of a wilderness situation. Some of the activities typically included are: (1) rope courses, (2) individual/group obstacles, and (3) group effort-cooperation games.

Amphitheatre:

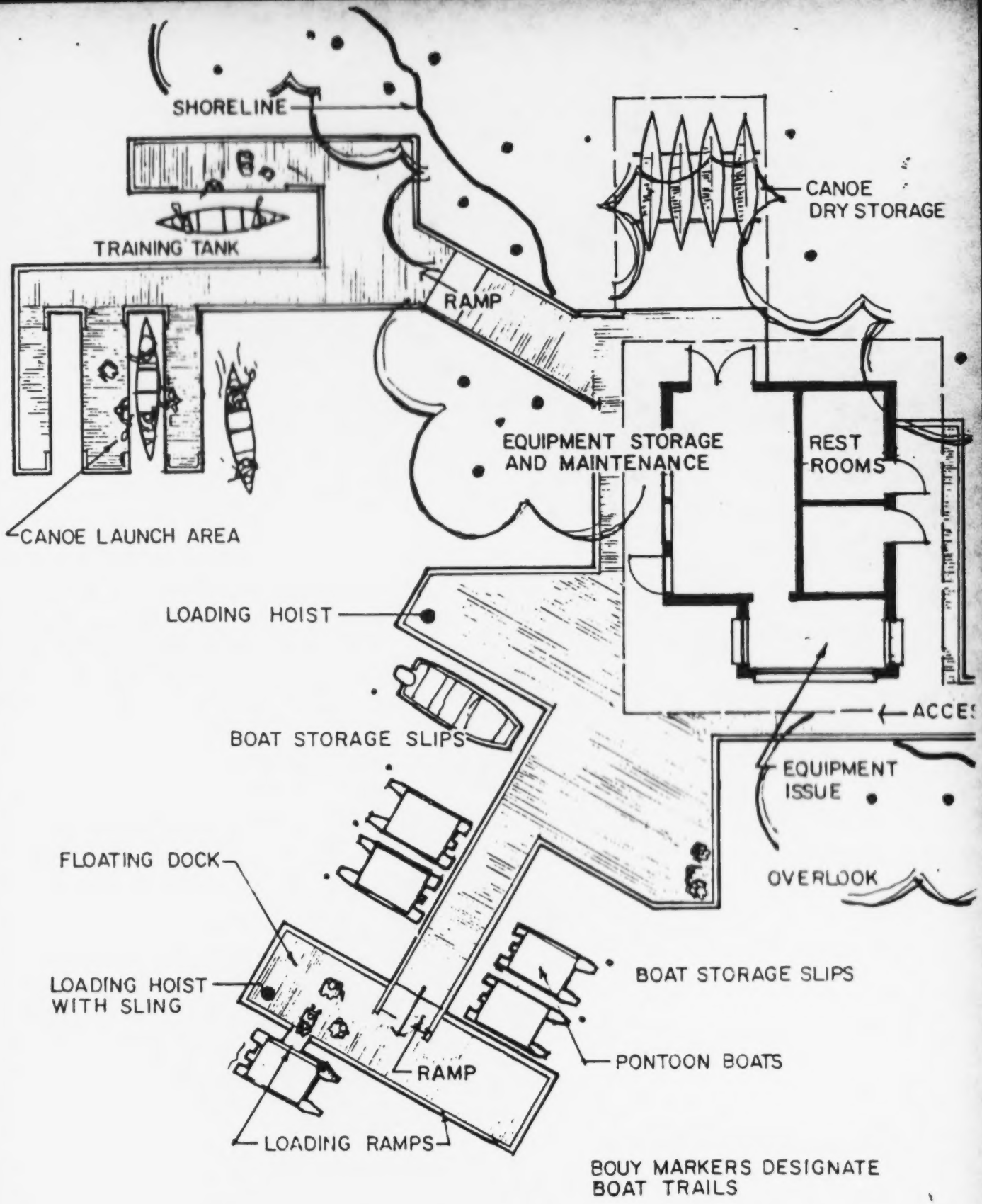
Plays, skits, assemblies, interpretive and nature presentations, and a variety of day and night camp programs will occur at the amphi-theatre. The structure is designed and located so that it will appear to be a natural extension of the landscape. Existing vegetation will be preserved around the amphitheatre.

Lakefront Aquatic Area:

Fishing, boating and related waterfront activities are natural, site related and focus on the lake and water edge zone. (See Figure 5)

Aquatic Area (Pool):

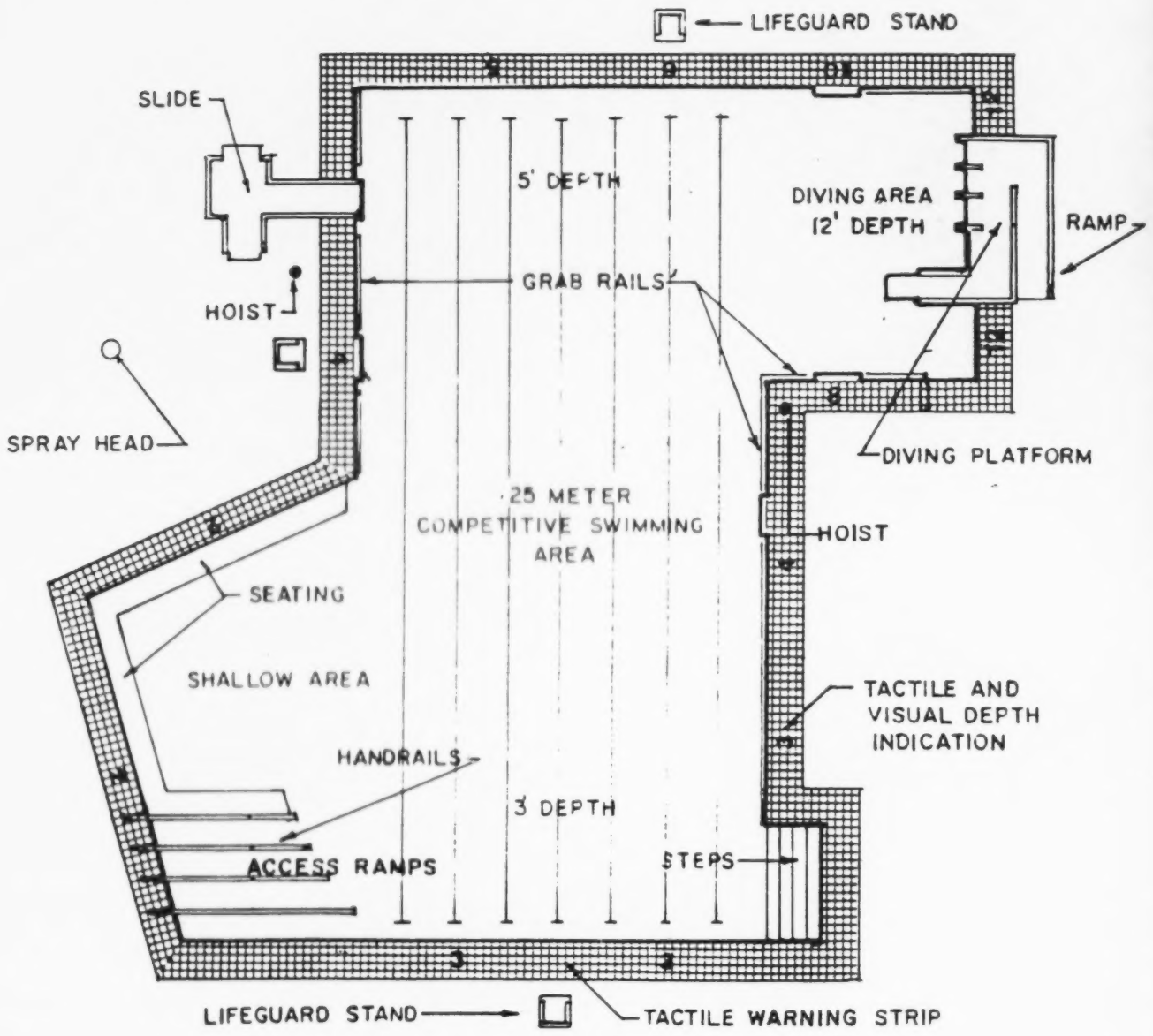
Swimming and related water activities have proven to be an effective activity for providing disabled individuals with physical and psychological benefits. Because water provides buoyancy, a greater sense and ease of movement is possible for the handicapped. Water type activities, therefore, make it possible for more individuals to participate and enjoy the benefits of exercise. (See Figure 6)



BOAT HOUSE AND DOCKS

Figure 5

NOTE PORTIONS OF POOL TO BE SHADED BY OVERHEAD CANOPY.



SWIMMING POOL

102

Figure 6

Camping Areas:

The camping areas will provide an important aspect of the wilderness camping experience, including tent camping, campfire program and wilderness craft activities. In consideration of the capability range of individuals anticipated at the camp, two camping situations will be provided: (1) a primative campsite with no other amenities than a hard-surfaced walk/trail access; (2) an improved camp area accessible from a Class I trail and has toilet and water facilities.

Trails and Walkways:

A system of trails and walkways will be developed to connect all use areas and to allow handicapped users to participate freely in a recreation experience. Specialized trails such as boardwalk, nature and boat trails are included. The trails/walkways concept of the camp envisions a variety of trail types that will be developed and well marked by level of difficulty, natural features, located in the camp, and distance to be traveled. The following are trail categories:

Class 1 - Little difficulty: Paved, hard-surfaced trails, accessible by foot, motorized wheelchair, or walking devices.

Class 2 - Moderate difficulty: Paved surfaces accessible by wheelchair, primarily located at the periphery of the main camp.

Class 3 - Difficult: Paved or treated surfaces accessible by foot and passable by wheelchairs. Rugged terrain may require hard physical exertion for the wheelchair-bound person.

Class 4 - High difficulty: Not designed for wheelchairs; service and emergency access only.

Information and Signage System:

The camp environment will be a new and strange experience to many of the participants. Acclimation to this environment and full use of facilities will be enhanced by a clear and comprehensive (recognizing a wide variety of impairments) information and signage system. With such a system, some individuals may be able to utilize many camp facilities on their own (without attendant aid), thereby increasing the feeling of accomplishment and self-worth; all individuals will experience a fuller camp stay.

Nature Interpretation:

Nature activities/nature interpretation are central to the theme of the outdoor camp experience. (See Figure 7) They provide adventure and learning experiences in simple, interesting and helpful easily accomplished activities that exercise all the senses. Maximizing the experiences to be gained from the outdoors requires, however, understanding of the resources, careful programming, preparation of experiences, and activities suitable for the participants.

The camp at Lake Chicot with its waterfront location, varied topography, and abundant botanic, zoological and climatic resources will provide prolific resources and opportunities for a nature/interpretive program.

Outdoor Sports and Games Areas:

Outdoor sports and games areas furnish the camper with a variety of activities that provide the means of improving physical strength, stamina and motor skills, as well as the opportunity to develop social skills needed to participate in games. Through individualized activities, the camper has the opportunity to achieve physical feats of increasing complexity. Some of the activities include miniature golf, horseshoe, shuffleboard and wheelchair and ambulatory par/vita courses.

Playground Area:

The playground will provide structured and unstructured play activities for campers. The playground will include structures for defined play activity (swings, slides), creative play elements (sand tables, freeform climbing blocks, and open areas of lawn which encourage use of the imagination). This mixture of apparatus is necessary as some children handicapped by mental and emotional problems may be able to obtain satisfying play experiences only through the use of define apparatus, whereas children with vivid imaginations may quickly lose interest in traditional play apparatus, and therefore benefit more from creative activities.

Conclusion:

We are going to try and have a facility that anybody could enjoy. As a matter of fact we are probably going to have to beat the so-called normal people off with a stick. What we are trying to do is allow the handicapped individual to experience as close an adventure as he/she is capable of encountering. We believe our camp will allow anybody - we could

105

NATURE INTERPRETIVE TRAIL

106

Figure 7

have a platoon of Marines go out there and enjoy themselves and we could also have somebody who is a paraplegic go out there and enjoy himself. That is what we want, we want to challenge the person to the best of his/her abilities, but we want to let all handicapped experience the outdoors. We think we can do that in Louisiana - we know we can do it in terms of walking and hiking; we know we can do it in terms of the traditional Louisiana activity - fishing - and boating. We think what we have here will be as good if not better than any found in the Nation (thanks to the camps that have gone before us and generously allow us to draw from their experience). With that, we hope to open Louisiana outdoors to the handicapped - to a much greater extent than they have now.

VOLUNTEERS

Paul Boorman
Jay Ellington
Sylvia Royster

Abstract:

Volunteers are a valuable asset to park and recreation agencies. Both parties benefit from association: the volunteer in terms of recognition, appreciation and self-worth; the agency in cost-effectiveness and project(s) completion. As volunteers citizens and businesses can be called upon to render no-cost services or donate equipment. This session highlights the following topics: Putting Leisure to Work, Adopt-A-Park; Trusts and Gifts and the CHAMP Program.

Introduction:

HOW WOULD YOU LIKE $68,000 OF WORK DONE IN THREE MONTHS FOR NOTHING? Real simple, get your agency to hire volunteers. Volunteers want to volunteer because they want to - they want to get a piece of the action, they want a pat on the back. Volunteers donate time, services and goods. They are out there... waiting for YOU to ask THEM to help YOU. The cities of Shreveport, Louisiana and Longview and Houston, Texas think volunteers are the only way to go. In this time of budget tightening and cut-backs, considerable work can still be accomplished simply by asking the citizens to work for you as volunteers. That means they don't get paid, but they have much to gain from the experience and so do you. The three members of the panel have developed volunteer programs for their respective cities. They will tell you to get the necessary volunteer programs started and how to continue the momentum.

We've all noticed various types of ideas to adopt something - "Adopt-a-Pet," "Adopt-a-Doll," "Adopt-a-Senior Citizen,", etc. The City of Longview decided to get on the bandwagon, too. Besides our VIPS (Volunteers in Public Services Program), we adopted an idea from Shreveport called Adopt-A-Park. Adopt-A-Park is a program of the Longview Parks and Leisure Services and the Longview Beautification Association, designed to help beautify and keep our City litter-free and clean. The concept of the program is to recruit community groups, individuals and businesses to adopt public spaces such as parks, playgrounds, neutral grounds, esplanades, entrances to the City, intersection islands, etc. By participating, these groups and individuals agree to keep the adopted area clean and through their voluntary efforts help relieve the City of some of the financial burden in maintaining these areas.

It is fairly easy to start a program; it is another thing to keep it going. People are willing to volunteer, especially when you tell them how THEY benefit and help THEIR City. Once we get volunteers, we have them fill out and sign an agreement of commitment. The agreement states that the volunteer does and what the City does (Figure 1). The volunteer is added to a roster that helps in management of the program (Figure 2). Note the column heading "Sign Provided" - recognition is provided to participants by installing project signs and who is responsible for the project. The signs are placed in prominent locations but are established only after a probationary period. Further recognition is given by Certificates of Appreciation.

Recognition is a big one-up for participants, and they are recognized publicly for a job-well-done. This is further incentive for volunteers to continue the work. Volunteer work is not necessarily complex or time consuming. Volunteers need do no more than control litter in their areas once a week. Normal City maintenance continues, augmented by the volunteer work force.

Another Longview volunteer program/work force is our VIPS (Figure 3). Both programs have been effective and we urge other communities to seriously consider similar programs.

Volunteer Program, Houston:

CHAMPS (Concerned Houstonians Assisting Municipal Parks) is essentially the same type program as Adopt-A-Park or VIPS. Faced with budget cuts, layoffs and new programs and projects that had to be accomplished in our Parks and Recreation Department, the CHAMPS program was created. To kick CHAMPS off, certain steps were taken: (1) we formed a task force to (2) decided how to get the program going; (3) we had to orient the grounds personnel to the idea of volunteers as a maintenance augmentation who were NOT going to rob the city personnel of their jobs; (4) most cities have "volunteer centers" that halp establish and/or provide the volunteer work force. We used various low-cost advertisement and recognition means to encourage people to volunteer.

An excellent means of advertising is by short public service announcements on radio and T.V. These are a free and highly effective way to bring people into the program. Another form of publicity was asking individuals or businesses to volunteer time and services to produce such items as bumper stickers and T-Shirts. When Houston lost over 4,000 trees during one of our hurricanes we initiated a mostly volunteer program to "releaf" the city. To promote the project and encourage participation, all the forms of publicity were used. In return for their services or goods, businesses were publicly recognized. Of course, that is good advertisement for them, at no cost to them.

When starting a project, it is best to select a high visibility location. This gives volunteers great satisfaction, indeed, they in this way get public recognition for their work. Recognition and appreciation on the part of the supporting agency are extremely important and critical to the work forces' attitude and longevity of the program/project. It is sad, but there have been cases of people doing good, hard volunteer work for ten years and getting not the slightest bit of recognition, save that from the immediate paid supervisor. You must put each and every volunteer on a pedestal, but, give the proper amount of credit for the amount of work accomplished. Yearly certificates of achievement can be given out and human interest newspaper, radio and television articles can be done on the volunteers. Recognition at a larger scale has very high two way visibility.

Do you know that the Sierra Club will build you a trail system at no cost (other than you supplying the material - in our case wood chips)? Civic organizations will praise you for "allowing" them to do this or that much needed project. In the case of the Sierra Club it is possible for your city or agency to get a write-up in the national bulletin or magazine - good publicity for you. And, of course, you must sincerely praise and support their effort - insure media coverage. While you deal with civic organizations or special interest groups as volunteers, you must make them understand, however, that they cannot expect special services on the part of the city (e.g. free use of otherwise pay facilities). It is important to manage the program and use an agreement form such as those used by Shreveport and Longvies (Figure 1).

In the agreement be sure to include a liability statement, that is, volunteers are not covered. That must be clear to them. We had one ten-year volunteer break her wrist while working for us and because of her time and effort felt we owed her hospitalization. That was a court battle. Also, in the contract make sure a duration of service is included - this gives you the leverage to "lean on" volunteers to accomplish their promised work. Your programs should have a promotion system built in. Again, this is yet another form of recognition. Lastly, be sure to document your entire program, from inception to concurrency or finish.

By the way, do you have any idea what our CHAMPS Program cost? Aside from $1,000 it took to train 1,700 prople and the thousands of dollars its worth, it costs practically nothing. For instance, if we figure each volunteer was worth $6/hour and that each worked sixteen hours a month, for three months and we had 190

workers, that is something on the order of $54,720 that we didn't have to pay. And trash was picked up, lawns mowed, hedges trimmed, rose gardens maintained, and so on, and on, and on...

Shreveport:

As Paul brought up, I guess we are like big brother to Longview. When you hear "I volunteered," you can be sure its for just about everything under the sun these days. Most everyone volunteers or would like to volunteer - its human nature. It is simply a matter, if you are at the receiving end, to make them see what exactly it is they would like to volunteer for. It is a matter of challenging them in an area. In our case we challenge them to adopt-a-park, pick up litter, donate time, services, money, equipment, property. When we succeed in bringing volunteers into the City system, we see them as part of the staff and they are treated as such. It is necessary to establish program guidelines - job descriptions are written and contracts are entered between the City and the volunteer. Volunteer evaluation and promotion criteria needs to be built into the system from the start. The agency needs to be able to hire and fire volunteers. By setting these conditions before the volunteer - letting he or she know its a no pay but high praise job, if they stick with it - usually insures results.

In Shreveport we perceived several areas of need that could best be answered through volunteer services and programs. The Adopt-A-Park program has been very successful in keeping our City clean, trimmed and beautiful (Figure 4). One tenth of the entire maintenance of our City's 190 rose beds is provided by our volunteer work force.

Needs, in many cases, are created by citizens, so we turn right around and ask the citizens to become volunteers in the problem-solving process. Amateur groups are important sources of manpower, for they are volunteering and positively interacting among themselves anyhow. We try channeling some of that energy and talent into our Adopt-A-Park program. An amateur photography club will, indeed, pick up litter, and they may supply other services, related to their hobby as well. The City of of Shreveport has worked with numerous amateur, non-profit organizations, developing and accomplishing projects that saved the City tremendous funds. And of course, recognition of all effort is public and a high priority.

We try to save money by asking businesses to donate as gifts money for maintenance (e.g. donating $100 as sponsor of a public swimming pool for one day) or for long-term, non-replaceable equipment (e.g. $125 for a park bench). A SPAR

Gift Catalog is maintained and presented to businesses, organizations and individuals when there is a need (Figure 5). We needed a 40,000 square foot activity center and of course it was going to be built through a bond issue. Bond issues mean tax hikes, and while everyone was hopeful, the bond issue kept failing, failing, failing. We were finally able to acquire the facility debt free by using matching funds from our hotel/ motel fund and a $60,000 private cash donation.

CITY OF LONGVIEW
PARKS AND LEISURE SERVICES DEPARTMENT
LONGVIEW BEAUTIFICATION ASSOCIATION

LETTER OF AGREEMENT

THE FOLLOWING is a letter of agreement between _____.
Name of Person/Organization

hereinafter referred to as "SPONSOR" and the City of Longview through the Parks and Leisure Services, hereinafter referred to as "PALS", to provide maintenance services on _____ Park, roses or other plants, playground, beginning _____, 198 and ending on _____, 198 .

BY THIS LETTER, the SPONSOR agrees to provide the following services on the boulevards, roadsides, playgrounds, roses or other plants named above: (Check applicable items.)

___ Pick up litter and debris ___ time(s) per week.

___ Cut grass ___ time (s) per month.

___ Remove weeds and vines from around rosebeds and other plants.

___ Other services (describe below):

BY THIS LETTER, PALS agrees to the following: (Check applicable items.)

___ Provide recognition to the SPONSOR

___ Continue to provide current level of maintenance.

___ Other services (describe below):

IT IS FURTHER understood that this agreement may be cancelled by either party for any reason by providing ten (10) days written notice to the other party.

IT IS ALSO AGREED that PALS does not assume liability for the actions of the SPONSOR in performing maintenance on CITY property.

THIS AGREEMENT MAY be amended at any time by mutual agreement of both PALS and the SPONSOR. This agreement entered into this _____ day of _____, 198 .

ACCEPTED BY:

_____
Signature

_____
Name

_____
Address

_____
Phone Number

LONGVIEW PARKS & LEISURE SERVICES

_____
Director

BEST COPY AVAILABLE

Figure 1

CITY OF LONGVIEW
PARKS AND LEISURE SERVICES
ADOPT-A-PARK ROSTER

ORGANIZATION / INDIVIDUAL	LOCATION / PARK	RESPONSIBILITY	DATE ACCEPTED	SIGN PROVIDED
Lonnie Mitchell	Julieanna	Litter control 3 times/week Paint equipment	7/27/83	
Longview Men's Garden Club	Magrill/Rose Garden	Weed beds, cut old blooms, litter control when cutting blooms	8/1/83	Yes
Fillies Softball Team	Lloyd Walker Field	Litter control 3 times/week	8/1/83	
John Kimble	Cargill between Meshack/E. Hughey	Litter control 2 times/week	8/1/83	
Longview High Student Council/Jimmy Giddings	Akin	Litter control 1 time/week cut grass 1 time/month weed beds	10/1/83	
Patsy & Wendell Holloway	Guthrie between McCann/Glencrest	Litter control 1 time/week	9/17/83	
Garden Gate Club Sali Welch	Curtis Park	Litter control Many times/week weed beds possible plantings	9/27/83	
Johnny Cace	Cargill between Eden/LeDuke	Litter Control Clean leaves off trail	11/1/83	
Alene & Lester Rozelle	Cargill between Ruth Dr/Meshack	Litter Control Sweep leaves	11/15/83	
Hydrangea Garden Club Mrs. Rable McJilton	Area at 2300 Eastman	Litter Control; mowing; weeding	12/9/83	

Figure 2

BEST COPY AVAILABLE

The City of Longview's

VOLUNTEERS IN PUBLIC SERVICE PROGRAM NEEDS YOU!

Students
Professionals
Retirees
Housewives

QUESTIONS YOU MAY HAVE ABOUT VOLUNTEERING

WHY ARE VOLUNTEERS IMPORTANT IN THE LIFE OF A COMMUNITY?

Volunteers supplement paid helpers in many areas enabling both public and private sector agencies and organizations to reach more persons with better services at less cost. Volunteers also allow paid workers to better focus their professional skills and energies on their jobs. Citizens who volunteer can learn more about their community needs and resources, and can serve as communication links to the entire community. Volunteering also enables citizens to meet some of their own needs and create self help and mutual aid efforts that are appropriate and useful to all parties concerned.

WHAT POSITIONS ARE VOLUNTEERS USED IN?

- Typing Help
- Research
- Filing
- Receptionists
- Art Work
- Public Relations
- Recreation Activities
- Inspection
- Radio Dispatch
- Tour Guides
- Data Entry Operators

WHAT DIVISIONS UTILIZE VOLUNTEER SERVICES?

Virtually all divisions within our city government utilize the services of volunteers. Among those now using volunteer services are the following:

- Police Division (CID, Records, PBX, and Municipal Court)
- Fire Division (Administration and Training Area)
- Planning Division (Administration, Code Enforcement, DCBG, Building Inspection, and Housing)
- Municipal Services (Purchasing)
- Utilities Division (Public Relations, Water Billing)
- Administration (Volunteer Services and Public Relations)

HOW MUCH TIME IS INVOLVED?

Volunteer work does not require alot of time — 3 hours a week will keep you active in our volunteer program. The hours and days you work, many times, can be structured for your convenience. However, most volunteer positions are open Monday through Friday, from 8:00 a.m. through 5:00 p.m. Some areas do use volunteers after hours and on weekends.

HOW DO YOU BECOME A VOLUNTEER?

Call, or come by the Volunteer Office located at 300 West Cotton Street. Office hours are from 8:00 a.m. until 5:00 p.m. Monday through Friday or call Sharon Hendricks, Volunteer Coordinator for more information at 757-6668, Ext. 11.

WHAT ARE YOUR RESPONSIBILITIES AS A VIPS VOLUNTEER?

1. Consider volunteering a serious commitment.
2. Be supportive of city government and represent it in an appropriate and responsible way.
3. Observe the same rules and policies of the City as paid staff or use constructive channels for change.
4. Maintain confidentiality in all issues pertaining to customers, or records with which you may deal.
5. Offer feedback and suggestions to paid staff.
6. Take part in training which is required or pertinent to the job you are volunteering to assume.
7. Be on time for work and follow through on any commitments you have made. (Scheduling conflicts should be made known to the staff as soon as possible so appropriate action can be taken.
8. Accept supervision.
9. Inform paid staff of any skills that should be known for the placement process before taking a volunteer assignment.
10. Give your supervisor adequate notice before you terminate a job and be honest about the reasons for leaving.

TAX DEDUCTIONS FOR VOLUNTEERS ANOTHER PLUS

A number of tax benefits are available for volunteers under the general charitable contribution education of the IRS Code. The IRS explains this by noting that volunteers can deduct "Unreimbursed expenditures made incident to the rendition of services to a qualifying organization." Translated, that means a volunteer may deduct out-of-pocket expenses incurred while doing volunteer work for certain groups approved by the Internal Revenue Service.

Qualifying organizations include, but are not limited to units of government, organizations for scientific, literary or educational purposes, charitable groups, organizations for national or international sports competition; and certain veterans groups. The organization must have prior approval as a qualifying organization from the IRS (if in doubt — ask for proof of tax-deductible status).

The following are representative types of expenditures that volunteers may want to deduct:

1. Direct gifts of money to organization
2. Automobile mileage and expenses
3. Bus and cab transportation expenses
4. Parking and tolls
5. Telephone bills

The following MAY NOT be deducted

1. Value of volunteer time donated
2. Dependent care expenses
3. Meals (unless away overnight)
4. Entertainment

A complete description of federal tax deductions for volunteers can be obtained from your local IRS office. Ask for the Publication on "Income Tax Deductions for contributions"

WHO CAN VOLUNTEER?

Anyone can volunteer — housewives, professional persons, the retired, students, etc. All that is required from a volunteer is concern for their City or community and a need to help wherever they are best suited.

FACTS ABOUT VOLUNTEERING AND THE VIPS PROGRAM

- According to a recent survey by the Gallup Poll, over 84 million Americans (52% of the adult population) donate some part of their time as volunteers.
- The City of Longview's VIPS Program was organized April, 1983.
- VIPS stands for "Volunteers in Public Service"
- VIPS has over 25 different volunteer positions to offer you
- VIPS can place you in virtually all city government agencies or departments
- VIPS asks only for 3 volunteer hours a week to remain active in the program
- VIPS offers you the following benefits in return:
  1. Job Training
  2. The chance to renew old job skills
  3. Companionship
  4. Involvement in your community and city government
  5. Opportunity to help others
  6. Recognition at annual events to honor volunteers
  7. Coverage in the employee newsletter
- VIPS would like to help get your volunteer career started — don't wait, call us now and find out how you can join our group. Do something to benefit yourself and your community — be a VIPS volunteer!

Figure 3

ADOPT-A-PARK

Shreveport Clean Community Commission
and
Shreveport Parks and Recreation Department

ADOPT -A- PARK

ADOPT-A-PARK is a program of the Shreveport Parks and Recreation Department (SPAR) and the Shreveport Clean Community Commission (SCCC), which is designed to help keep our City litter-free and CLEAN. The concept of the program is to recruit community groups, individuals and businesses to adopt public spaces such as parks, playgrounds, neutral grounds, rosebeds, intersections, blocks, etc. By participating, these groups and individuals agree to keep the adopted area clean, and through their volunteer efforts help relieve the City of some of the financial burden in maintaining these areas.

Individuals, Neighborhoods and Civic Groups

You, as an individual homeowner, a neighborhood organization, church, school, or youth group, can "adopt" a block of neutral ground, a small park, playground or rosebed, as a volunteer project. You can agree simply to keep the litter picked up or can also cut the grass, weeds and water plants. The Parks and Recreation Department will provide their normal maintenance. A simple letter of agreement is signed by the adopter and the Parks and Recreation Department.

Rules and Tools

Picking up litter and brush are the only rules. Mowing and trimming are optional, depending on the size and location of the spot. Landscaping such as planting flowers, trees, shrubs, etc. is possible, but please do not begin to do this without contacting the Parks and Recreation Department, since there may be some official restrictions on landscaping particular areas. The Sponsors (Parks and Recreation Department and the Shreveport Clean Community Commission) cannot provide trash bags or tools for clean-up. However, if each person brings just one tool, one trash bag, and plenty of enthusiasm, the job will be done before you know it.

Information

Interested? Call SPAR at 226-6446, or SCCC at 22-CLEAN. We will work with you to find a needy area for your or your organization to adopt. Together we can all work to make Shreveport a city to really be proud of.

YOU CAN MAKE THE DIFFERENCE!!

Businesses

Businesses can either have their employees maintain an adopted area, possibly as volunteers, or they can contract the work (litter pick-up and grass cutting) to an individual or a group (i.e., a Scout Troop, or 4-H Club). This also may provide a source of income for youth groups or community groups. Also, a business can work out a voluntary partnership with a youth group or civic group to maintain the adopted area.

Recognition

After adopting an area and maintaining it for an initial period of time, the Shreveport Clean Community Commission will provide a sign of recognition at the adopted site with the name of the adopting individual, family or organization. Also, Certificates of Appreciation will be awarded to each group or individual by SPAR.

Reasons

ADOPT-A-PARK is a great way to show community spirit in Shreveport. It will make our city a cleaner, safer place to live, and, as an added bargain, we will all save tax dollars. Shreveport taxpayers spend thousands of dollars a year on litter clean-up. If enough people become involved in our campaign against litter, this money can be used for other city purposes.

JOIN THE CLEAN TEAM TODAY!

Shreveport Clean Community Commission
(SCCC)
P.O. Box 188
Shreveport, Louisiana 71161
(318) 22-CLEAN

or

Shreveport Parks and Recreation Dept.
(SPAR)
800 Snow Street
Shreveport, Louisiana 71101
(318) 226-6446

Figure 4

SPAR GIFT CATALOG

CATEGORY	ITEM REQUESTED	COST
Equipment	Carpet Huntington Golf	13,000
Equipment	Carpet Lakeside Golf	5,000
Equipment	Carpet Querbes Golf	6,000
Equipment	Icemaker	3,000
Equipment	Radio, Mobile	800
Equipment	Picnic Table (IMF238-6PG)	150
Equipment	Picnic Table (IMF238-8PG)	175
Equipment	Picnic Table (IMF238-6AG)	275
Equipment	Picnic Table (IMF238-8AG)	325
Equipment	Picnit Table (IMF260-6AG)	400
Equipment	Park Bench (IMF 852-6P)	100
Equipment	Park Bench (IMF 852-8P)	125
Equipment	Gazebo (IMF 1600)	4,000
Equipment	Gazebo (IMF 2500)	7,000
Equipment	Retangular Shelter (IMF 1620)	3,500
Equipment	Retangular Shelter (IMF ???)	4,500
Equipment	Retangular Shelter (IMF 3036)	7,000
Equipment	Bicycle Rack (IMF 610)	300
Equipment	Bicycle Rack (IMF 615)	225
Equipment	Players Bench (IMF 808S AG)	100
Equipment	Mobile Stage	30,000
Equipment	Lifetime Whirl (Miracle 302)	900
Equipment	Flying Gym (Miracle 306)	850
Equipment	Rodeo Rocky Sp. Animal (Miracle 901)	125
Equipment	Sammy Seal Sp. Animal (Miracle 919)	125
Equipment	Lion Spring Animal (Miracle 917)	125
Equipment	Arch Swing (Miracle 2004)	1,100
Equipment	Wave Slide (Miracle 105-2)	700
Equipment	4 Unit Kindergarten Set (Miracle 224)	700
Equipment	Mark IV (Miracle 111-74)	21,000
Equipment	Rubber Chair Swing Set (Miracle 2224)	650
Equipment	Water Fountain	380
Plants & Landscape	Golf Fertilizer	7,000
Plants & Landscape	Rye Grass Seed	1,000
Plants & Landscape	Medalist Rye Grass Seed	9,000
Plants & Landscape	100 Trees	1,500
Plants & Landscape	Ornamental Fountains	25,000
Plants & Landscape	Sprinkler System Barnwell	4,000
Plants & Landscape	Tree - Various for Parks	25
Recreation & Athletic Equip.	Golf Score Cards (all courses, 1 year)	1,550
Recreation & Athletic Equip.	Golf Pencils	1,300
Recreation & Athletic Equip.	Public Address System	2,000
Recreation & Athletic Equip.	Hollywood Bases (Set)	175
Recreation & Athletic Equip.	Homeplates	20
Recreation & Athletic Equip.	Tennis Wind Screens	210
Program Sponsorship	Junior Tennis Instructor	1,200
Program Sponsorship	Junior Golf Instructor	1,200
Program Sponsorship	Free Swimming for One Day	100

Figure 5 119

DOWNTOWN REVITALIZATION

Keith Zwick
John Sellars

Downtown revitalization is becoming more and more important. But the problems that landscape architects, park administrators, designers, and planners face are also of great importance. They must create an environment which will attract pedestrians but not tie up time and money in maintenance.

Planners and designers are asked the question, why revitalize a downtown area? The answer is because it is economically feasible (based on a cost ratio per square foot of leasable space). Downtown areas usually have the highest density of development in any community; therefore, the available space must be used efficiently. Since there is not as much leftover space, as say in a park, the maintenance costs are higher. A landscape architect must always keep these maintenance costs in mind when designing a downtown landscape. It is the object of all planners to design a maintenance free or low maintenance landscape. The following maintenance issues should be considered in the design process.

1. Use removable paving materials over underground utilities, such as brick laid dry or concrete sets. An alternative is to place utilities in conduits.

2. Do not use plants that will require extensive pruning or plant material that cannot withstand direct sunlight or extensive pedestrian traffic. If the plant palette is limited to certain varieties of plants maintenance requirements will be reduced. And finally remember do not plant just one of a kind.

3. Keep in mind easy access to plant beds by a wheelbarrow or small vehicle. (Provide ramps when possible.)

4. Provide for easier day to day maintenance. For example, avoid corners which will collect trash, and mount trash cans and benches on walls where possible. Another example is to design drainage inlets that will not easily clog with trash but that will allow pedestrians to walk on them. Providing plenty of hose bids which can easily be reached is another example of easier maintenance. And finally paint fountain and pool

bottoms a dark brown or black. This will reduce cleaning, give a more natural feel, and make any pool look deeper.

To reduce maintenance costs a designer should remember the following:

1. Buy locally manufactured benches, bollards, etc. This will make it easier to obtain new material and will generally cost less.

2. Design vandal proof irrigation systems by concealing irrigation heads under tree grates where they are less likely to be broken.

3. Use high pressure sodium or mercury vapor lights which are less costly than the conventional electric lights. And use lyxan plastic to cover lights instead of glass.

4. Design signs which are vandal proof. Using heavy gauge steel painted with enamel or even etched on letters and numbers will be less costly in the long run. To cover store directories, which frequently have to be updated, use lyxan over a blue printed sheet.

Costs of maintaining surfaces must also be considered since 75% to 90% of all surfaces are paved and the other 10% is a combination of plant beds and trees. The most economical material is paving and the paving material used should compliment the buildings. (Brick for older buildings and granite for newer contemporary buildings.) Open areas with tree grates, brick, and mulch are the next least costly surface material. Ground cover can be used to contrast the paved surfaces while adding green color and life to a landscaped pedestrian area. Lawns can be used but are not recommended due to the high maintenance and severe damage done by pedestrians. And finally gravel areas are the most expensive to maintain and not recommended at all because of weeds, and vandals who would throw rocks.

Downtown revitalization is becoming more important because people are beginning to realize the need for landscaping in any downtown. When designing any downtown pedestrian area a planner, designer, landscape architect, or park administrator should keep maintenance in mind because it does have a large impact on costs.

SHORE LAND MANAGEMENT AND EROSION CONTROL PRACTICES FOR LAKES OR RESERVOIRS

Dave Sutton
Garrett Gill

This session focused on selected case studies of shore land management techniques and also addressed specific measures and methods of erosion and sedimentation control.

Garrett Gill's brief presentation about erosion and its control was based on a paper that he hopes to publish soon. The major topics covered were: types of erosion; the hydrologic cycle; factors influencing erosion; implications of erosion; and methods of control At Mr. Gill's request, his paper is included at the end of the summary.

In the second part of this session, Dave Sutton discussed some management methods of providing quality recreational experiences. In doing this he addressed two major topics. The first was the role that an agency can play in the development of water resources. The second was the use of appropriate limited access management to control undesirable park users. In the session, Mr. Sutton stated that the opinions expressed were his own and were formed from personal experience and from talking with other professionals.

After a brief introduction outlining the history of urban and recreational planning, Mr. Sutton focused on some of the standard techniques used to manage water-based recreational facilities. Of these techniques, Mr. Sutton believes the master plan is the most effective. He then discussed two case studies showing how their methods of managing reservoir resources contrasted.

Case Study 1 - Lake Worth, City of Forth Worth, Texas:

Lake Worth is an old lake dating back to the teens and twenties. Its primary purpose was to provide a water supply for the city, but as Mr. Sutton understands, not much was done to develop the site until the 1930's. Over the years, the city has leased out sections of the park for private development. As a result, Fort Worth must now deal with private citizens who have built homes on the property. A new comprehensive plan has been developed to deal with this problem. The essential components of this plan are:

* Maintain water quality suitable for consumption and recreation.

* Preserve the unique qualities of the resource base.

* Optimize land and water use.

* Establish a practical balance between capital expenditures, ongoing maintenance, and generated income.

Case Study 2 - Lake Jacomo, Kansas City, Missouri:

Lake Jacomo was developed for recreational purposes, therefore a different management plan was adopted. The lake's master plan was focused on developing recreational opportunities, with little emphasis on private development. Considerations were made in the master plan to separate different recreation areas, while binding them as a single unit.

Next, Mr. Sutton discussed Limited Access Management, as a tool to prevent overcrowding in our parks, and to limit undesirable activities. In this context, he defined undesirable activities as excessive drinking, drug abuse, gang violence, and thievery. Mr. Sutton points out that while these activities may be considered recreation by some, recreation management must fall within the framwork of social values and benefit the community at large.

Mr. Sutton listed some of the common Management techniques used to solve these problems, they included:

* Enforcement of all laws and ordinances.

* Creation of departmental rules and regulations which are approved by the public.

* The use of one way loop roads.

* Education, to teach children acceptable values.

In conclusion, Mr. Sutton stated that, based on local values and circumstances, all situations are unique. As managers, all of our policies and decisions must be based on the existing circumstances and public opinion.

The agencies contacted by Mr. Sutton while preparing this presentation are as follows:

Jackson County Parks Department
Kansas City, Missouri

City of Oklahoma City, Oklahoma

State of Oklahoma
Tourism and Recreation Department

City of Dallas, Texas

Parks Department
Santa Clara County, California

CONTROLLING EROSION AND SEDIMENTATION ON SHORELANDS

Garrett Gill

Background:

In the geologic sense, erosion is a natural process. The glaciers which moved across a good portion of the U. S. milennia ago illustrates this basic fact through the removal, transport and deposition of soil. Natural erosion is also an invisible act. Under an undisturbed, native vegetative cover, soil erodes at the rate of about 1" every 100 to 250 years (Batie, 1981). On-going, however, is soil rebuilding generated by the decomposition of organic material from vegetative matter. Erosion is classified as either wind or water erosion and refers to the removal of soil by a natural phenomenon. Sedimentation is the transportation and deposition of material created by erosion. Throughout this paper the terms soil erosion will be applied to the water aspects of erosion and sedimentation only as the major source of non-point pollution impacting on lakes and reservoirs.

Concern over soil erosion in the United States began in the early 1900s. with the efforts of Hugh Hammon Bennett, a soil mapper for the USDA Bureau of Chemistry and Soils. In 1928 he co-authored Soil Erosion, a Natural Menance with W. R. Chapline of the U. S. Forest Service. This effort led the way for the passage of HR 7054 "Soil Conservation Act" which enabled states to establish soil conservation districts and by 1947 all states had established districts.

The soil erosion control planning effort continued from 1947, but significant advancement was not made until the passage of what is commonly known as the Clean Water Act in 1972 (PL92-500). Section 208 of the act more clearly defined the role government should take by stating "area wide planning should include significant non-point sources of pollution and indentify methods to control such pollution". Other significant legislation included PL 95-192, the Soil and Water Resource Conservation Act, which requires the Department of Agriculture to continually appraise and annually evaluate the soil, water and related resources on non-federal lands and to develop programs for furthering conservation, protection and enhancement of these resources.

With respect to the magnitude of the soil erosion problem, over 2 billion tons of soil are lost annually from the nation's agricultural lands. This figure does not include soil loss from construction projects, mining projects or natural disasters

such as floods, hurricanes or volcanic eruptions. Again on a national average, water erosion soil loss alone amounts to approximately 4.8 tons per acre. The state of Texas leads the country in gross erosional losses (includes both water and wind erosion) with a total annual loss amounting to almost nineteen tons per acre (Council on Environmental Quality, 1981).

Basics of Erosion:

Soil erosion by water cannot take place without water runoff. Runoff is one component of the hydrologic cycle which may be defined as:

R = P-I-ET-C-S where:

R = runoff
P = precipitation
I = infiltration into soil (loss)
ET = evaporative + transpiration (loss)
C = interception (loss)
S = surface storage loss

Thus for runoff to occur, the precipitation event must exceed the sum of the losses. For erosion to occur, runoff must be of the magnitude to dislodge the soil particles. Runoff magnitude is the product of a given amount at a given velocity. Four major factors dictate the degree to which soil erosion will take place:

1. the rainfall event
2. the given soil type
3. the topographic condition
4. the degree and extent of vegetal cover

The Rainfall Event:

Generally speaking, rainfall events of high tensity and long duration create the greatest potential for erosion. Specifically, it is the kinetic energy of rainfall which initially dislodges the soil particle. The kinetic energy of rainfall is at a maximum at rainfall intensities between 50 and 100 mm per hour (2-4 inches per hour) and when greater than 250 mm per hour (10 inches per hour) (Kirby,_____).

Storms of these intensities are of the cyclonic type typical of cold fronts and generally create the isolated but severe thunderstorms to which many of us are accustomed. Wind speed and direction in association with these storms can also create additional erosion potential. The greatest potential exists when raindrops fall vertically on slopes in excess of 10% because dislodgement and transport of soil particles take place simultaneously.

Rainfall events and characteristics have been studied extensively by numerous climatologists since the onset of climatic data keeping. The data has been compiled and correlated to create rainfall erosivity factors for the United States (Wischmeier and Smith, 1965). The rainfall erosivity factor is a measure of the manner in which energy of rainfall and intensity are combined to define the efforts of raindrop impact and turbulence of runoff to transport soil particles (Mitchell and Bubenzer, 1980). The Soil Conservation Service has taken this data and presented it in the form of iso-erodents (lines of equal erosivity) on a map of the United States. In general terms rainfall erosivity factors decrease from south to north and from east to west, with the exception of Hawaii.

Soil Types:

Throughout the United States, erosion and arable land most often occurs on those of sandy and silty soils (Wischmeier and Mannering, 1969). The soil particle size distribution is the principal factor of the soil's erosion potential. Soils with more than 30-35 percent clay are generally stable and resistant to raindrop impact and splash erosion. The clayey soils are often cloddy soils and their rough surfaces store more water than do other soil types. Clay soils have also better adhesion properties than do silts or sands. Soil aggregation effects erosion potential as well. Greenland (1965) found sandy soils are more erodible than clayey soils as the aggregates of the sandy soils slake more easily and seal the soil surface. Soils with higher clay and organic matter contents have more stable aggregates due to the strong bonds between their colloids.

Related soil factors also affecting erosion include: soil compaction, which inhibits the infiltration of the soil; antecendent moisture condition which indicates the remaining amount of water storage capacity in soil; soil profile which often determines the depth of erosion. Given well developed soils, below the plow layer (ap horizon) the subsurface soils are more compacted and less prone to erosion. If bedrock is near the surface, only more shallow surface rills would develop; however, if the subsurface layer is of unconsolidated material, deep gullies could occur. Sands, gravels and loose soils typically come under the gully category.

The Topographic Condition:

The topographic element of a landscape has a large influence over the extent and degree of erosion. The longitudinal length of a slope, and the gradient are the two main influencing factors.

Quantitatively they may be combined and presented as slope geometry (S) or topographic factor (LS). For comparison purposes, the erosion potential increases by a factor of about 1.2 per 100 feet of increased slope length and by a factor of 1.3 per 2 percent increase in slope. A 1000 foot slope with a 50 percent gradient has an erosion potential twelve times greater than a slope of equal length at a ten percent gradient and almost sixty times greater erosion potential than a similar slope with a 4 percent gradient (March, 1978). It should be noted that with other erosion factors remaining constant (such as soils, rainfall erosivity factors and plant cover), convex slopes generate more erosion than do concave slopes. To understand this occurrence, one must study the slope geometry of each slope type. On concave slopes, slope is constantly decreasing while slope length increases. Conversely true, on convex slopes, slope is increasing while slope length decreases. An analysis of various slope geometry conditions will indicate a greater erosion potential on short steep slopes than on flatter longer slopes for a given change in elevation.

Vegetal Cover:

The type and percentage of cover of vegetation is the fourth element affecting erosion potential. The saying "someting is better than nothing" applies here. Soil erosion potential increases as vegetation coverage decreases. The term applied to represent vegetal cover conditions is the coefficient "C". In agricultural situations "C" is taken as the "cropping factor". With respect to minimizing erosion potential, turf or other forms of short sod-like grasses provide the best protection followed then by tall grasses or short shrubs, medium size shrubs, tall shrubs and finally trees. The "C" factor values range from zero to one and are often expressed as percentages. The lower the value, the lower the erosion potential. Typically well established turf covers have "C" values of 0.005 to 0.01 depending on condition. For weeks or other irregular cover the value ranges from 0.10 to 0.20 and for unvegetated or disturbed sites the "C" value is one (1) (Marsh, 1978). Smith and Ports (1976) have compiled recommended values for the "C" factor with respect to construction areas treated with mulches and seeded. Specific values and "C" factors are available through the Soil Conservation Service technical office in Portland, Oregon.

Implications:

The four principal components of soil erosion, precipitation characteristics, soil type, topographic conditions and vegetative cover are used in the quantification of soil losses due to water erosion in the Universal Soil Loss Equation (USLE). The USLE is expressed as A = R.K.S.C. where

A = soil loss in tons per acre per year
R = rainfall erosivity factor
K = soil erodibility factor
S = slope geometry factor
C = vegetal cover or cropping factor

Assume for purposes of estimating soil erosion the following site factors or conditions:

Site location: Dallas, Texas (far western side)
Project scope: Client is in the process of constructing an eighteen hole regulation length golf course on a 180 acre tract of land.
Previous land use: Cultivated crops, few trees.
Phisography: Site drains as one major watershed to a 70 acre lake under the control of the Texas Parks and Wildlife Department. The average land slope is six percent, the farthest distance from any point on the property to the shoreline of the lake is 1000 feet. Soil type is primarily a silty sand loam.

To calculate the soil loss over a construction period of one year, respective values are assigned to the coefficients of P,K,S,C.

R = rainfall erosivity factor for far west Dallas = 250
K = soil erodibility factor for a silty sand loam = 0.37
S = slope geometry factor = 2.1
C = vegetal cover factor, first six months = 1.0, following 3 months = 0.35, remaining 3 months = 0.05. Composite "C" factor = $(\frac{6}{12} \times 1)+(\frac{3}{12} \times .35)+(\frac{3}{12} \times .05) = 0.60$

Soil loss per acre (A) = 250 x 37 x 2.1 x .60 = 116.5
Soil loss over entire site in tons = 20,979
Equivalent loss in cubic yards = 15,540
Equivalent loss in inches over entire site = 5/8"

Based on a single storm event normally exceeded once every year occurring during the major earth moving phase of golf course construction, the soil loss for the individual storm would amount to 0.28 tons per acre or 50.4 tons for the total site.

A = .36 x .37 x 2.1 x 1

For comparison purposes assume the 70 acre lake is rectangular in shape and maintains an average depth of 15 feet. The soil loss over a one year period would reduce the depth of the lake by three inches.

The scenario presented is not a "worst case" description. The evidence as presented although hypothetical is exemplary, illustrating that soil losses due to water erosion can contribute significantly to the infill or sedimentation of lakes or reservoirs.

Footnotes:

1. "Soil Erosion, Crisis in America's Croplands?" Batie, Sands S., p. 15.

2. Environmental Trends (Washington, D.C.; Council on Environmental Quality, 1981).

3. Soil Erosion, Edited by M. J. Kirby from article, Mechanics of Water Erosion by R. Evans, page 111.

4. Wishmeier, W. H. and Mannering, J. W. (1969). Relation of Soil Properties to its Erodibility. Proc. Soil Sci. Soc. Am., 33, 131-137.

5. Greenland, D. J. (1965). Interaction between clays and organic compounds in soils. Soils and Fertilizers 28, 415-425.

Control of Soil Loss and Sedimentation:

To a large extent, control of soil loss and sedimentation is voluntary and implemented on a site by site basis. Federal laws on the subject consist of documentation, development guidelines, technical assistance anf financial aid. Section 208 of the Federal Water Pollution and Control Act (Clean Water Act, PL 92-500) provides for cost sharing of improvements between rural land owners and the Federal Government related to the control of non-point pollution originating from agricultural lands. Technical assistance and plan preparation is provided by the soil conservation service.

In Section 304 of the Clean Water Act, the law provides for the "Identification and Evaluation of Non-Point Sources of Pollution" and establishes criteria to establish the processes, procedures and methods to control pollution. Section 304 specifically identifies study in agricultural and silvicultural activities, mining activities and all construction activity including the runoff from facilities resulting from such construction (FWPCA Sect. 305, PL 92-500). Few laws exist that require or legislatively enforce mandatory soil erosion and sedimentation control measures on an off-site basis. When they do exist, enforcement is through a local agency or governmental body. There are, however, many laws concerning problems of sedimentation (Busby 1962, 1967). Generally these laws are of common law origin and make it clear that downstream owners can recover damages due to sedimentation. The major obstacle with such laws is that the "burden of proof" is on the plaintiff.

The foregoing discussion indicates controlling off-site soil erosion losses and sediment flow is difficult, consuming and possibly an expansive proposition. Future federal legislative action may provide mandatory sediment control planning, however the trend is suggesting that litigation itself is undergoing an expansion of use as the primary control mechanism (Cox, W.E., and Walter, W.R., 1976). Currently in many common and civil law cases, the plaintiff is receiving better remuneration for nonpoint source pollution damage. These judgments reflect general concern toward environmental improvement.

The on-site control measures to be described are indicative of the means of landowner or governmental agency may impose to control erosion or sedimentation on properties under their respective jurisdictions. The methods presented are not new, but are representative of the contemporary practices used on undeveloped or developing shorelands. In this case undeveloped

land refers to lands under agricultural land management such as grazing or cultivation. Developing lands refer to lands undergoing transforming from a previous agricultural use to one of recreational, residential, or commercial use.

Control on Undeveloped Lands:

The basis for the establishment of erosion and sedimentation control methods on undeveloped lands is determined through use of the Universal Soil Loss Equation. The value obtained should be compared to the soil loss tolerance value (T') published for each specific soil type by the Soil Conservation Service in their County Soil surveys. Soil loss tolerance is the maximum rate of soil erosion that permits a high level of productivity to be sustained. If the actual amount of soil loss exceeds the soil loss tolerance factor, erosion and sedimentation control practices should be implemented. The author wishes to note, however, that although the soil loss tolerance factors represent maximum soil loss for sustained productivity, efforts should be directed toward developing best management practices which reflect soil losses lower than the soil tolerance loss factors in order to adequately safeguard against unnecessary sedimentation into lakes and streams.

Best management practices (BMP) which can be used to reduce erosion and sedimentation potential on undeveloped lands include:

On pastured, grazing land, develop and implement one or more animal management programs to eliminate over grazing and detrimental plant association changes. Efforts should be made to obtain uniform distribution of livestock and to eliminate localized soil losses which occur nearby watering, salting, feeding, milking or loafing areas. Best management practice would require evaluation of the forage capacity, animal grazing habits and schedules, soil characteristics and land form physiography (Krivak, 1978). Such BMP suggest additional fencing for animal rotation and range land resting, protection of steep slopes and water courses from animal intrusion, and periodic revegetation of forage crops.

On cultivated corp lands, develop and implement crop rotation management and other land management practices to eliminate seasonal unplanted land conditions and disturbance of unproductive land areas such as steep slopes, and wetlands. Best management practices also include the timely and discrete applications of fertilizers, pesticides, and herbicides in order to reduce environmental degradation to water supply systems and public health. Crop rotation

practices are important in reducing soil loss over the period of rotation. The worst case scenario may be pictured as cultivated land under continuous fallow, tilled up and down slope. The next worst case scenario is the crop management plan of conventional corn or cotton with no rotation. One example of a crop management plan is based on a four year rotation of corn (cotton)-corn (cotton)-wheat-meadow. Crop residues are left and a no-till planting of the second corn (cotton) crop would reduce the erosion potential by 400 to 500 percent (Mitchel, K. J., and Bubenzer, G.D., 1980). Other crop management plans produce similar results. The major aspects to be derived from crop rotation include minimum tillage, crop residues left above the ground or incorporated into the soil, shallow plowing, and when applicable no-till planting.

On slopes, BMP should limit cropping to slopes that are at or below the gradient producing soil detachment created by laminar flow or runoff. Velocity of the runoff, not quantity, is the principle determinant. Basically the recommended maximum velocities for erosive cultivates soils are 1.5 feet per second and 2 feet per second for most other cultivated soils (Schwaab, 1966). Using these guidelines maximum slopes can be determined for flat land farming practices using an adaptation of the Mannings Velocity formula:

$$S = \left(\frac{V*N}{1.486 \times R^{2/3}}\right)^2 \text{ where}$$

S = Maximum slope in decimal form
V = design runoff velocity in feet per second
N = coefficient of friction
R = hydraulic radius

Using the above formula and substituting the flow velocity values of 1.5 and 2 and establishing the coefficient of friction for cultivated soils as 0.030, the maximum slope can be computed for various depths of laminar flow. (Note for shallow depths of infinite width, the hydraulic radius (R) may be assumed to be the depth of laminar flow in feet. Depth of flow may be determined as the rainfall intensity for a given storm expressed in inches per hour minus the infiltration rate of the soil in inches per hour.) The following tables expressed the maximum land slopes for erosive or other type soils given various flow depths.

Erosive Soils		Other Soils	
Flow depth	Maximum gradient	Flow depth	Maximum gradient
¼"	22%	¼"	50%
½"	11%	½"	22%
1"	4.5%	1"	12.5%
1.5"	2.6"	1.5"	8%
2.0"	1.9"	2.0"	4.8%
2.5"	1.25%	2.5"	3%

If the actual land slope exceeds the maximum gradient for a particular flow depth, then diversion, retention or bench terraces should be installed. Diversion terraces may be economically constructed on slopes up to 12%, retention terraces on slopes up to 8% and bench terraces on slopes from 12% to 60% (Morgan, 1980).

Wetlands, under BMP, should also be spared for cultivation. Typically these areas may be defined as lands overlaying high water tables. Soil survey information provided by the Soil Conservation Service is a means for identifying such lands. Lands with water tables in the vicinity of 0 to 30" of the surface are potential areas for ground water pollution and contamination created by fertilizers, insecticides, herbicides or other agricultural chemicals. Runoff and erosion from cultivated agricultural land which is directed toward these areas should be diverted away from or entrapped above using vegetated diversion ditches, sediment catchment basins, or runoff filtering basins.

All of the methods and techniques mentioned above insure runoff entering lakes, reservoirs or tributaries are as free from sediment or chemical pollutants as possible. Good management of undeveloped lands is paramount in reducing the impact of erosion and sedimentation on shorelands.

Control on Developing Lands:

Control on developing lands differs substantially from control of undeveloped land in that the primary concern for erosion and sedimentation prevention occurs during the construction process. Because the construction process is a relatively short term event, the detriments of erosion or sedimentation, although significant, are noticed or felt on a short-term basis as well. Erosional soil losses during the construction process generally are much greater than on undeveloped cultivated land. Losses in the range of one hundred tons per acre per year are not out of the question.

The impact of urbanization upon undeveloped land creates detrimental and damaging erosion and sedimentation not only on the urbanizing area under construction but also the adjacent undeveloped landscape. In comparing an urbanizing drainage area with a natural vegetative drainage area, the greatest impact of erosion occurs at the interface between the two land uses, associated with the developing land areas are increased runoff volumes due to loss of permeable surface area and increased runoff velocities created by hard, smooth surfaces such as roadways or lined channels. The higher runoff velocities and greater runoff volumes when discharged onto undeveloped land create erosion and sedimentation potential often times greater than that of the urbanizing area under construction.

The basic principles of erosion control on developing lands address the issues associated with the construction processes and the impact on the adjacent land. Issues will address controlling erosion and sedimentation on the site as well as that which may occur off the site but is controllable through permanent or semi-permanent measures on the site.

Basic Principles:

1. Keep disturbed areas small: The amount of land disturbed has a direct relationship on the amount of soil loss. By disturbing only what is absolutely necessary for construction and maintaining the remaining land area in vegetative cover will limit erosion only to the disturbed area and will provide vegetative soil entrapment before the soil moves offsite.

2. Divert excess storm water runoff from transversing the area under construction by doing so through the use of diversion ditches will minimize erosion by permitting only the water falling on the disturbed area the opportunity to create soil loss. Excess water runoff or runoff occurring on properties uphill from those under construction can, because of the kinetic energy of flowing water, erode areas under construction at alarming rates.

3. Keep slopes short and gentle and use intermittent vegetative cover to protect such areas or slopes during construction. Often during the construction process significant grade changes must be made to satisfy the functional use of the site elements. When required, the use of tenaces incorporating short less steep slopes will keep erosion at a minimum.

4. Design and create sediment traps or basins to collect sediment before it enters water bodies or leaves the site.

These measures protect adjacent lands of lower elevation and provide a means of soil reclamation during the construction process.

5. Provide protection at the outlets of surface drainage ways and subsurface drainage systems. Protection methods such as weirs, robbled line aprons, or drop spillways are energy dissipators and serve to reduce to acceptable limits the velocity at which water goes from a confined state to an unconfined state.

   Other means by which erosion and sedimentation can be controlled during the construction processes include temporary seeding of disturbed areas, the installation of sediment fences or banners, the stabilization of road and parking lot surfaces by use of stone aggregate or rubble base courses and by the mulching or roughing of surfaces that by nature of the construction process must be left bare.

Conclusion:

As administrators and managers of land, the importance of recognizing the need to reduce to acceptable limits the soil losses on undeveloped or developing lands is paramount. The issue of soil erosion and sedimentation is not new nor are many of the methods presented here. Controlling erosion and sedimentation may be brought to light by the social scientist Maslow who roughly stated, "when the only tool you have is a hammer, everything begins to look like a nail." In context without awareness of an issue in its entirety, one tends to think only about the end result and product and not the implications or abstractions of the act. Since we do not see erosion or sedimentation activity on a daily basis, the tendency to underestimate the significance or implications is likely. This article's purpose is to once more illustrate the purpose of erosion and sedimentation control and to suggest the methods which may be used to minimize their impact on undeveloped and developing shorelands.

Batie, Sandra S. Soil Erosion, Crisis in America's Croplands. Washington, D. C.: The Conservation Foundation (1983).

Busby, C.E., 1962, Some Legal Aspects of Sedimentation: American Society of Civil Engineers Trans., Vol. 127, pt. 1 p 1007-1044.

Busby, C.E., 1967, Aspects of American Sedimentation Law: Journal of Soil and Water Conservation, v. 22, no. 3, 0. 107-109.

Council on Environmental Quality. Evironmental Trends: Washington, D. C.: Governmental Printing Office, 1981.

Cox, W.E., and Walker, W.R., 1976. "Legal Controls Applicable to Soil Erosion," p. 308-312. Proc. Natl. Conference on Soil Erosion, 1976 Purdue University, publish-Soil Conservation Society of America. Ankery, Iowa.

Evans, R. "Mechanics of Water Erosion." In Soil Erosion, 109-128. Edited by M. J. Kirby. New York: John Wiley and Sons, 1980.

Federal Water Pollution and Control Act. P.L. 92-500 (1972) Section 208 Statute 1288 (j) (1), Agricultural Cost Sharing.

FWPCA PL 92-500 (1972) Section 304 (f) Identification and Evaluation on Nonpoint Sources of Pollution; Processes, Proceedings, and Methods to Control Pollution.

Greenland, D.J. "Interaction Between Clays and Organic Compounds in Soils." Soils and Fertilizers, 28(1965), 415-425.

Krivak, J.A., Journal of Soil and Water Conservation, July-August, 1978, pp. 161-166. Best Management Practices to control nonpoint-source pollution from agriculture.

Marsh, William M. Environmental Analysis for Land Use and Site Planning. New York: McGraw-Hill, 1978.

Mitchell, J.J., and Bubenzer, G.D., (1980). "Soil Loss Estimation" page 40 from Soil Erosion, Edited by M. J. Kirby and R.P.C. Morgan, John Wiley and Sons. New York, 1980.

Mitchel, J. Kent and Bubenzer, G.D., "Soil Loss Estimation." In Soil Erosion, 17-62. Edited by M. J. Kirby and R.P.C. Morgan. New York: John Wiley & Sons, 1980.

Morgan, R.P.C., 1980 Soil Erosion edited by Kirby, M.J., and Morgan, R.P.C., John Wiley and Sons, New York, pp. 268-270.

Schwab, G.O., Frevert, R.K., Edminster, T.W., Barnes, K.K., (1966). Soil and Water Conservation Engineering. 2nd Edition, John Wiley and Sons, New York, 00. 244-268.

Smith, J.O. and Ports, M.A. "Maryland Highway Erosion and Sediment Control Evaluation and Future Directions." In Land Application of Waste Materials. Ankeny: Soil Conservation Society of America, 1976, 262-275.

Wischmeier, W.H. and Smith, D.D. Rainfall-erosion losses from Croplands East of the Rocky Mountains, Agricultural Handbook No. 282. Washington, D. C.: U. S. Department of Agriculture, 1965.

BOTANIC GARDEN MAINTENANCE

1. Brief History of the Forth Worth Botanic Garden:

It began with a dream of the parks commissiners and others with horticultural interests to have an outdoor library of plants. In 1930 the Board of Park Commissioners received this perspective from S. Herbert Hare of Hare and Hare of of Kansas City, Missouri. In 1931 the first phase was completed which called for the development of Rock Springs Park. These were three natural springs that had been a source of water for Indians, pioneers and the Army. Historians believe that the first two white men in the area camped at this site in the early 1840's. Stones from Palo Pinto County were arranged in a naturalistic landscape; however Queen Tut, the Fort Worth Zoo's well-known elephant had to be called to the rescue. She was used to compact the pools so they would hold water. Unfortunately, when I-30 was constructed in the 1950's, it disrupted the flow. Today we continue the flow by pumping water from the Trinity River.

II. Construction of the Rose Garden was the second phase and it was accomplished over a 15 month period in 1932-33. With plans already on the shelf application for federal relief funds was made and received. Through economic disaster of our country came many fine park facilities, one being the beginning of the Fort Worth Botanic Garden. Some 750 laborers worked in two day shifts for $2.00 per day that were usually paid in meal tickets. Carpenters and stone-masons who earned 6 to 10 times the $2/day wage built two shelters, colonade and laid 4000 tons of stone to create the garden. The laborers enthusiastically donated the first roses for the rose ramp. The rose garden was dedicated on October 15, 1933.

III. Cactus Garden was begun in 1934 and an iris test garden was added in 1935. Also in June of 1935 the Fort Worth Garden Club opened the first Garden Center in Texas. The original building included a combined office and library and a greenhouse. The building has been expanded over the years and at one time provided office space for the Park and Recreation Department.

IV. Planning enabled Fort Worth to take advantage of every opprotunity to establish their Botanic Garden. A master

plan was adopted in the early '60's that included a Japanese Garden. A plan for the Japanese Garden was completed in 1969 and construction began in 1970. It was built by a combined effort of the Park and Recreation Department and was dedicated in March of 1973. This past year 150,000 people visited the Garden.

V. The Botanic Garden consists of 114 acres and is maintained with a staff of 20 and a current budget of $600,000. The figure is misleading however, because the Garden draws support not only from other park sections - Forestry, Landscape Production and Trades but also from the Street and Light, and Signal Building Maintenance and other City departments.

The staff is comprised of:

Superintendent of Horticulture - directs the Gardens' progress

Senior Horticulturist - oversees day to day activities

Educational Horticulturist - coordinates docents and other volunteers in educational activities. This position was initially funded by a matching grant from the Junior League. Last year 6300 children and senior citizens were taught through this program.

Clerical - Secretary, Clerk, Custodian - sechedules activities in four meeting rooms which last year had 600 meetings of over 15,000 people.

Supervisor and foreman - supervises 12 garden attendants in the day to day maintenance of the Garden.

Three Greenhouse Attendants care for the tropical collection and produce all bedding plants for the Garden in four greenhouses of 18,634 square feet.

Four gardeners are assigned specific areas of responsibility:

One spends full time in the Japanese Garden pruning, watering and cleaning. When this 7-1/2 acre garden was added, three additional laborers were requested but only one was granted.

A Gardener and Groundskeeper maintain 3,325 roses in two gardnes consisting of 4,400 square feet of beds. It takes 12 man hours to spray and 32 manhours to fertilize every two weeks. The remainder of the time is spent weeding, mowing, watering, litter pickup and disbudding.

One Gardener cares for 40,350 square feet of color beds. Some 15,000 annuals and 6,000 bulbs are planted annually. Basic time operational performances per 1,000 square feet.

Bed preparation	200 minutes
Planting	400 minutes
Weeding-no mulch	60 minutes
Weeding-with mulch	20 minutes
Spraying	10 minutes
Fertilizing	5 minutes

43.7 acres of turf is maintained. One equipment operator mows two acres per hour using either an outfront 72" rotary or an 84" reel. 19" push mowers mow 1,000 square feet in 5 minutes. Edging 1,000 linear feet of walks takes 10 minutes.

One groundskeeper waters all of the turf, trees and shrub beds in the Garden.

Another groundskeeper and 2 to 4 extra help employees are used wherever needed most.

In addition to the week to week maintenance, there are special projects such as the cleaning of the tree pools in the Japanese Garden which takes 300 man hours.

The Garden staff is involved in over 10 special projects that may take as little as a half day to two weeks preparation for the Garden Festival.

Although team work is often utilized to accomplish projects, it is individual areas and job responsibilities that maintains the Garden.

In addition to volunteers being used as docents throughout the Garden they are also used in the Treasure Tree and greenhouses. Last year 5,444 hours were donated by volunteers in the Garden.

Funding for the Garden is rather unique in that in addition to the general fund and contributions that are solicited for special improvement, a contract with Garden Center, Inc. provides for the channeling of all money from concessions and Japanese Garden entry fees back into the Garden.

We hope to continue this arrangement of contract with Fort Worth Garden Club after they build the new educational conservatory complex. The City Council has already approved basic funding and through concessions, rentals, and entry fees the budget will be supplemented.